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PNEUMONIA IN EARLY INFANCY AND IN CHILDHOOD

ITS MORTALITY AND TREATMENT, WITH SPECIAL REFERENCE TO THE USE OF ALCOHOL *

HENRY KOPLIK, M.D.

NEW YORK

Innumerable papers and discussions on pneumonia in infancy and childhood have been published within recent years. Most of these are based on insufficient data, as the number of cases subjected to a critical analysis are not many, and the recorded observations as to management and diagnosis do not emanate from one source. Hospital statistics, as a rule, are collated from the services of a number of attending physicians. The histories and diagnoses must, in such cases, vary widely as to points of view, and thus will militate against the reliability of the ultimate conclusions.

Many authors err primarily by assuming that the anatomic nature of pneumonia, whether bronchopneumonia or lobar pneumonia, can be determined definitely at the bedside. This is at times almost impossible, and though the age limitations of bronchopneumonia as compared with lobar pneumonia are well recognized, this is not so important to the practitioner as are other considerations that will be emphasized in this paper.

I have suggested that the study of a large series of cases of pneumonia occurring in infants and children, and extending over a considerable number of years, will give more accurate information as to frequency and mortality than the study of a limited number of cases over a period of one, two or even five years. The severity of the disease, the morbidity and the mortality, varies from year to year. In some years, the disease will be comparatively mild; in others, it will be severe. An average taken over a number of years will give more extensive and exact information as to changing modes of practice and the various forms of the disease one is likely to encounter. The fallacy of attaching undue importance to brilliant outcomes, in cases in which methods long obsolete are employed, as compared to the results in cases in which modern treatment is used, will also be shown by such a study. I need refer only to the fresh air treatment of today and to the digitalis and alcohol treatment of yesterday in order to emphasize what Niemeyer said of pneumonia years ago, namely, that the true course of pneumonia could be learned only from the cases of practitioners who, owing to their ineffective dosages of drugs, follow what practically amounts to *laissez-faire* treatment. Under normal conditions, pneumonia at any age is a self-limited disease of definite duration, and, barring complications, it has a definite tendency to recovery. If patients lose in their fight against the disease, it is because of constitutional limitations of the organism attacked and the utter inability of some patients to protect themselves against complications that exhaust their vitality and lead to fatal consequences.

The age of incidence is of the greatest importance. I have divided the first year of life into three periods, from birth to 3 months, from 3 to 6 months, and from 6 to 12 months. The age consideration is certainly more practical from a clinical standpoint than the anatomic nature of the pneumonia. A mere statistical summary of cases of bronchopneumonia throws very little light on a given case, as it does not take into sufficient account the elements of constitutional weakness in a patient and the difficulties the practitioner encounters while endeavoring by his treatment to build up a successful resistance to the disease. In some infants the pneumonia or bronchopneumonia seems to spread over the whole of both lungs. In others, the disease is sufficiently limited to justify the assumption that the inherent resistance of the organism will suffice not only to combat the disease, but also to protect itself against a spread of the lesion in the lung. This is an exceedingly important aspect of the disease, and it explains why in certain cases of young infants, no matter what is done, the disease gains headway, and the patient succumbs because of this and not through inappropriate treatment. In older children, on the other hand, the structure of the lung, as Delafield has explained, tends, in a measure, to protect the patient against a spread of the lesion. As a rule, a lobar process is limited in its attack to a definite portion of the lung, in which case patients show greater constitutional resistance to the progress of the lesion, and there is a tendency to recovery no matter what treatment is employed. If the foregoing underlying principles in regard to pneumonia in infancy and childhood are understood, all cases can be more justly analyzed and the patient may be approached with the conviction that the ultimate outcome of all pneumonia depends mainly on the vitality of the patient and his powers of resistance.

CLASSIFICATION OF CASES

It is often said that the results are far better in private than in hospital practice. If this is true, then it is an indictment against our hospital system, and is a good weapon to use against it. But it is not true; indeed, it is far from the truth. I prefer the well conducted hospital ward, free from hospitalism—its light, air, sunshine, modern methods of nursing—to the dirty, dingy, stuffy tenement, or to the harassing and annoying conditions of better private practice. The

* From the pediatric service of the Mount Sinai Hospital.

results in hospitals certainly should be as good as if not better than in private practice. I think statistics will bear me out in the statement that the clinical course of pneumonia is better in hospitals than elsewhere. The careful nursing and the freedom from noise and worry certainly tend to better results. Even the public recognizes this fact.

The hospital physician says that if he could get the patient earlier he could do better. Most patients come to the hospital either in the beginning of the period of onset or when this period is well advanced. Some patients come in only a day before the crisis occurs, and a very few patients are brought in moribund. The argument of the hospital that the patients should be brought in earlier does not apply, therefore, to other than the moribund patients, and even as regards them, I am not convinced that bringing them to the hospital earlier would have saved them. With pneumonia it is not as with diphtheria, for in the latter early treatment saves. In pneumonia we have no specific, the early application of which would save. Therefore, our inadequate methods and not the place of treatment are to blame for our failures. Of course, some exceptions may be urged; but on analysis they will be found to be only exceptions. Very few children with pneumonia are exposed to the same dangers as some adults who walk around for days with the disease in progress, and then come to the hospital moribund. Most children are treated in their homes from the start. Their transfer to the hospital is only a change of place and cannot be used as a weapon for or against hospitals. The hospital statistics which I will present depict in a true and faithful manner the course of pneumonia in infancy and childhood. Though they are all hospital statistics, they are drawn from one service (my own), and the patients were all treated under a uniform system of therapy and nursing in a hospital of the modern type. They depict results that should obtain in private practice, and from my experience I am inclined to believe that they depict the true course of the disease under modern conditions.

I have divided my cases into two groups, Series A, comprising 1,351 cases occurring from 1906 to 1914, and Series B, in which are included all cases occurring during 1914 to 1915 and 1915 to 1916, namely, 391. The reason for this division will be given later.

I have first considered the mortality from the standpoint of age, and, in the case of infants, the incidence of fatality among the breast fed and the bottle fed, irrespective of the mode of treatment. Secondly, I have considered the influence of treatment, including nursing, and the conservation of the strength of the patient. In Series A there were 248 deaths, a mortality of 18.3 per cent. The mortality varied in different epidemics or years from 14.6 per cent. to 25.7 per cent. The percentage of mortality was increased according as the number of infants or children of younger age predominated. Comparing the mortality of the different ages in the total number of cases as shown in Table 1, it will be seen that the greatest mortality occurred below the age of 1 year and that the mortality decreased steadily after the fourth year. Thus, below 1 year of age, 334 cases showed a mortality of 35 per cent.; after the fourth year, the mortality ranged from 3.8 per cent. to 10.7 per cent., and between the seventh and eighth years, it was 3.8 per cent. These were the favorable years, when most cases were of the frank lobar type. Quite favorable was a group of cases after the tenth year, forty-six cases showing a mortality of 4.3 per cent. Omitting the first year, the record from the second to the tenth year and over was 1,017 cases, with a mortality of 131, or 12.8 per cent., certainly a very favorable showing.

All of the cases in infants below the age of 1 year, or at least a large majority of them, are of the bronchopneumonic type. I have made an analysis of these cases to show that at this age the mortality depends on factors against which our present modes of treatment are powerless. Among these factors are the

TABLE 1.—NUMBER OF CASES AND DEATHS ACCORDING TO AGE (SERIES A)

Age of Patient	No. of Cases	No. of Deaths	Percentage of Mortality
1 year	334	117	35
1-2 years	441	80	18.1
2-3 years	204	28	13.2
3-4 years	93	7	7.5
4-5 years	56	6	10.7
5-6 years	53	3	5.6
6-7 years	59	4	6.7
7-8 years	31	1	3.8
8-9 years	15	0	0
9-10 years	19	0	0
10 + years ...	46	2	4.3

constitutional resistance of the individual and the occurrence of complications. Pneumonia finds the organism unprepared to resist either the spread of the disease or the onset of complications, which carry away the patient in spite of all we can do. Of the 117 deaths occurring below the age of 1 year, 63.5 per cent. occurred in the first three months of life, 47.8 per cent. between the ages of 3 and 6 months, and 25.3 per cent. from the sixth to the twelfth month of life. The greatest mortality occurred at a time (from birth to the third month) not only when the body is in a formative period, but also when the powers of resistance to disease are at a minimum, and when complications easily set in and overwhelm the patient. In considering the mortality in pneumonia, clinicians, as a rule, shun these cases, if they wish to show favorable results from the treatment of a number of cases of pneumonia, swamping, as it were, this high mortality rate below 1 year of age by bringing forward large numbers of cases of pneumonia at the more advanced ages of childhood, up to the second year. Or they group all the cases below 1 year of age, thus avoiding the disconcerting showing of a high mortality among infants below 3 or even 6 months of age. No one who studies the statistics here presented can find fault with the mortality of the pneumonia cases from the fourth to the tenth year; 279 cases show a mortality of only sixteen, or 5.7 per cent. This, of course, presupposes deaths in all cases not due to empyema or operation for empyema.

TABLE 2.—NUMBER OF CASES AND DEATHS UNDER 1 YEAR (SERIES A)

1906-1914

Age of Patient	No. of Cases	No. of Deaths	Percentage of Mortality
0-3 mos.	44	28	63.5
3-6 mos.	69	33	47.8
6 mos.-1 yr.....	221	56	25.3
Total under 1 year			334

COMPLICATIONS

In speaking of complications, I shall consider those affecting infants and children below 2 years of age. I shall treat of their seriousness, and shall deal especially with those which in the end militate against the recovery of the patient.

Of 248 deaths below the age of 10 years, 192 patients died of or with complications. Most of the

cases in patients above 2 years of age show few complications, and this incidence diminishes markedly above the third year of age. Thus, there were 117 deaths below 1 year of age, among which were ninety-three fatal cases with complications. Between the ages of 1 and 2 years the complications occurred less often, fifty-eight in eighty cases, and in the second to third year, of twenty-eight fatal cases, there were twenty-two with complications. At this later period it may safely be said that the severity of the complication as regards its hastening a fatal issue is much less than during the first year. Of 117 deaths below the age of 12 months, fully ninety-three patients had complications that favored a fatal issue. At this period of infancy a complication that in later childhood might be overcome by the patient will not yield to treatment, but steadily exhausts the strength of the patient.

Of the infants below the age of 12 months affected with pneumonia, and dying with complications, we find the incidence given in Table 5.

Of the 117 cases of death occurring below 1 year of age, only nine patients came to the hospital in a moribund condition. The principal complications seemed to involve the gastro-intestinal tract. These infants were brought into the hospital in a state of

TABLE 3.—NUMBER OF DEATHS FROM PNEUMONIA WITH COMPLICATIONS ACCORDING TO AGE (SERIES A)

Age of Patient	Total No. of Deaths According to Age	Total No. of Deaths with Complications According to Age
1 year	117	93
1-2 years	80	58
2-3 years	28	22
3-4 years	7	6
4-5 years	6	5
5-6 years	3	2
6-7 years	4	3
7-8 years	1	1
8-9 years	0	0
9-10 years	0	0
10+ years	2	2
Total deaths		248
Total deaths with complications		192

marasmus, or suffering with ileocolitis. Therefore, fully half of the deaths were due to complications which lessened the chances of recovery when admitted to the hospital, and this in spite of the special nursing and care that were given them. Among the cardiac conditions were those of congenital heart lesions. In scattering cases, measles developed in the hospital, or the patients came in with measles, diphtheria, pertussis, nephritis; sepsis, abscesses of the joints and of the skin, erysipelas and tuberculosis of the abdomen. It is apparent that in the first year of life a patient with pneumonia, in order to recover, must remain free from complications, and especially must not suffer from conditions which sap the strength of the patient, and nullify all efforts of therapy. It may be said without reservation that the complications occurring in our cases were not the result of hospital conditions; that the patients were admitted to the hospital with these complications.

Meningitis.—To me the most serious complication, after that of the gastro-enteric tract, is meningitis. When accompanying a pneumonia occurring during the first year, meningitis is invariably fatal. It occurred more frequently in our statistics at this age than later in childhood. In the course of eight years, there were ten cases of meningitis at all ages verified by lumbar puncture. Five of these occurred in infants below 1 year of age. Only two cases occurred between the ages of 2 and 10 years. The frequency of this complication is thus much diminished after infancy and early childhood. The symptoms are not masked. The diagnosis of the condition is easily made. Lumbar puncture was made in all cases. Pneumococci, streptococci, meningococci and influenza bacilli were found in the puncture fluid. In the newborn the streptococci are to be sought.

Meningism.—The most misleading complication is meningism. This complication is much more frequent and misleading in older children than one would at

TABLE 4.—TOTAL NUMBER OF CASES AND DEATHS FOR EACH YEAR, ALL AGES (SERIES A)

	No. of Cases	No. of Deaths	Percentage of Mortality
1906-1907	116	27	23.2
1907-1908	157	31	19.7
1908-1909	156	23	14.6
1909-1910	177	40	22.7
1910-1911	182	33	18.1
1911-1912	210	32	15.2
1912-1913	221	28	12.6
1913-1914	132	34	25.7

first thought suppose. Meningism is a condition characterized by symptoms that at times closely simulate meningitis, and, as a rule, these symptoms are present from the onset of the disease. They are unconsciousness, delirium or stupor, rigidity, Kernig's sign, Brudzinski's sign, and Macewen's sign. In young infants the condition of the fontanel, whether it is bulging or not, will guide us, but in older children it is at times impossible, without lumbar puncture, to say whether or not meningitis is present. This is especially true in the onset of an apical lobar pneumonia. I have in these cases found a sterile cerebrospinal fluid, and waited patiently for three or four days before definite lung signs developed.

In older children, as a rule, the outlook is good, though the condition of the patient may be disquieting. When these cerebral symptoms appear in younger children and infants below 2 years of age, the prognosis is grave. Thus, of sixteen patients below 2 years of age showing these symptoms, nine died, and of eight below 1 year of age, six died. Of the whole series of thirty-one cases of meningism, fifteen patients were above 2 years of age, and only three died. Above 5 years of age, none died. I would conclude, therefore, that above 5 years meningism is of no moment as clouding the eventual prognosis, but below the age of 2 years

TABLE 5.—NATURE OF COMPLICATION

Cerebral	10
Pleural (empyema)	5
Cardiac (congenital)	3
Abdominal (intestinal infection)	31
Moribund in hospital	9

it is practically a fatal sign. In children above 5 years of age, if, after passing through pneumonia, cerebral symptoms appear just about the time one would expect improvement, the outlook is grave, especially if the local symptoms indicate no tendency to resolution.

THE BREAST FED AND THE ARTIFICIALLY FED INFANT

I have made feeding statistics of all infants below 1 year of age discharged from the hospital, and also of fatal cases for eight years, 399 cases in all. The discrepancy in figures between this and other tables is probably accounted for by the inclusion of a few cases from other services under my care. Of the 399 patients, 212 were either wholly or partly breast fed, or 53+ per cent., which is certainly an excellent showing for the mother effort. All of the infants below

6 months of age were nursed on the breast, during the illness, by the mother. In the hospital it is customary to have the mother come and nurse the baby as often as practicable. Of the 132 fatal cases below and at 1 year of age, sixty-seven patients were breast fed and sixty-five bottle fed. From this we are forced to conclude that for this class of infant the nature of the feeding was not of value as to the ultimate outcome of the case. It must not be assumed that, because an infant is breast fed, its chances of recovery are better than those of the artificially fed infant, except as shown in these statistics.

There are many so-called breast fed infants who are not robust, and to whom the breast being inadequate has not given the resistance that a successfully bottle fed infant has. I therefore would not say that, *a priori*, the nature of the feeding had any effect on the outcome, but that it was rather a question of the success of the feeding. Thus, a breast or bottle fed infant with good digestion, weight and absence of complications was better off as to prognosis than a bottle fed infant with bowel disturbance, or a breast fed infant to whom the breast has not been adequate, and in whom there were complications. Today a well fed bottle infant has as good a prognosis as the successfully fed breast infant, however heretical this statement may appear to some who believe that a breast will cover all sins of omission, as to the nutrition of the patient.

In the course of pneumonia an infant below 1 year of age, whose artificial feeding is skilfully handled and who, before the onset of the illness, has had no intestinal disturbance of moment, will combat the pneumonic process as well as the well nourished breast fed infant. In fact, the breast fed infant during pneumonia has much to contend with in the ministrations of an exceedingly nervous mother, whose breast milk seems to cause disturbance in the patient; whereas an adequately fed bottle infant has always a ration of uniform constitution, which disturbs the well-being less than the apparently more fortunate breast fed infant. Modern methods of artificial feeding of infants have not in any way compromised their resisting powers to the inroads of disease, nor can we say, as far as the prognosis is concerned, that the breast milk will succeed in cases in which the bottle fed infant may not hope to weather the storm. It is not the nature of the feeding, but rather its success in bringing a flawless constitution to the attack of pneumonia that determines the recovery or the fatal issue.

There is, of course, the reservation that among the poor and ignorant, the artificial feeding, especially in summer, is apt to cause serious and fatal gastro-enteric disturbance. At the same time, a study of the fatal cases shows that the breast alone cannot ward off a fatal issue. This is especially true in infants below 6 months, and more so below 3 months of age.

TREATMENT

The treatment of pneumonia in infants and in children may be divided into that of nursing, which includes the feeding, and the medicinal management of the case. The nursing reaches its primary importance in the period of infancy. I have pointed out how essential it is at this time to avoid mixed infections, if possible. In no field is this so evident as in the treatment of infants to the end of the eighteenth month. The care of the skin, eyes and mouth is of great and far reaching importance. Careless handling of the skin by nurses is productive of skin infections, furuncles and abscesses, which are apt to get beyond medical control and cause serious consequences. The same thing is true of other parts of the body. A nurse must, therefore, appreciate fully the necessity of cleanliness and attention to detail in order to be of the greatest aid to the physician.

This is what is meant when writers speak of hospitalism and infection. There is today no real excuse for hospitalism, and its presence should be a just cause for criticism of the efficiency of nursing and of hospitals. Very often infants who have had pneumonia are discharged from institutions in the most miserable condition. There are two sides to this picture, as far as the hospital is concerned. The patient may have come to the hospital in a worse condition than when discharged, and the attending physician may have sent the patient out believing that the convalescence would be more favored by such action, or the patient may have developed an infection in the hospital. The latter condition is inexcusable, and shows clearly that an institution which, in treating a simple condition, adds thereto that of marasmus, or vaginitis, or both, is unfit to cope in a modern way with the proper means of effecting a successful convalescence.

The feeding is a nursing as well as a medical problem in the management of pneumonia. A physician may prescribe a proper feeding, but if this feeding is not prepared and given to the patient in a proper manner, or the state of the nutritional conditions properly noted, then the physician is deprived of a powerful means to favor recovery. Not only is the nursing of these little patients important, but the nurse should be surrounded by safeguards that will aid her in her work, and she must not be hampered.

The ward should be bright and airy, with plenty of working space. The dark, damp, crowded baby ward should be a thing of the past. I have dwelt on the nursing because it is rarely spoken of in treatises or articles of the character of this one, and physicians are apt to concentrate their attention on a discussion of medical procedure, omitting what should be considered the first essential in the management of these cases.

Medical Treatment.—Any one who has seen several decades of the management of pneumonia in infants and in children must come to the conclusion that it is not the remedies that determine a successful issue, but the manner in which they are applied. Formerly, certain remedies, such as chest poultices, cold compresses around the neck, expectorants, cardiac stimulents, cardiac depressants and aconite were advocated with empiric ardor. In the treatment of pneumonia, I have been guided, first, by the proper nursing and feeding of the patients, and, then, from a medical standpoint, I have tried to support the strength of the patient with drugs, endeavoring, at the same time, to recognize complications and to meet them as quickly as I could.

Antipyretics.—I have rarely, if ever, resorted to antipyretics for the control of the fever. The fever is a valuable guide in the management of pneumonia, and it cannot be controlled to any great degree—that is, depressed—without injury to the patient. It is simply an expression of reaction of the economy against the inroads of the disease. We should allay the irritability of the nervous system and thus aid

the patient to withstand the fever. It is just as well to sponge the patient with lukewarm water and not to resort to ice-cold packs, or cold baths. The ordinary application of cool water to the chest in the form of compresses is sometimes as effective as any form of hydrotherapy, provided the patient is protected from exposure when the compress is on the body, or when it is changed. If the patient is irritable, and there is a moderately severe fever curve, a warm mustard bath is effective in quieting the nervous system. After such a bath, an irritable wakeful infant will fall into a quiet sleep for hours. In short, fever

TABLE 6.—COMPARISON OF CASES TREATED WITH AND WITHOUT ALCOHOL (SERIES A)

With Alcohol:	No. of Cases	No. of Deaths	Percentage of Mortality
1906-1907	116	27	23.2
1907-1908	157	31	19.7
1908-1909	156	23	14.6
1909-1910	110	29	26.3
1910-1911	13	4	30.7
1911-1912	26	8	30.7
1912-1913	34	11	32.5
1913-1914	20	11	55.0
Total number of cases treated with alcohol			632
Total number of deaths in cases treated with alcohol			144

Without Alcohol:	No. of Cases	No. of Deaths	Percentage of Mortality
1906-1907	0	0	0
1907-1908	0	0	0
1908-1909	0	0	0
1909-1910	67	11	16.4
1910-1911	169	29	23.1
1911-1912	184	24	13
1912-1913	187	17	9
1913-1914	112	23	20.5
Total number of cases treated without alcohol			719
Total number of deaths in cases treated without alcohol			104
Total number of cases treated with and without alcohol			1,351
Total number of deaths in cases treated with and without alcohol			248
Average percentage of mortality			18.3

is natural to pneumonia, and we should look with concern on an infant who has a low temperature curve with a severe lung lesion. There is no reaction to the infection in these cases, and it spreads. These patients are weaklings.

Drugs.—With infants, and even older children, we must avoid all disagreeable drug medication. I fear to "upset the stomach," as it is popularly termed, and thereby interfere with my nutritional efforts. This is of especial importance in young infants. Physicians will insist on giving calomel, ammonium carbonate, ammonium chlorid, terebene, camphor, glycyrrhiza and ipecac in large, disagreeable doses. I often ask myself, "Why?" They cause vomiting, and in some cases diarrhea, and hamper the patient to an inordinate degree. The superiority of the hypodermic method of medication is well illustrated in the management of the pneumonia of infants and young children. The stomach is left free for the assimilation of whatever food the infant may take, and the momentary pain of a hypodermic needle is more than compensated for by the freedom of the patient from dyspeptic symptoms.

Use of Alcohol.—In considering my treatment of the 1,351 cases here collated, there are two distinct periods. One period extends over the years in which alcohol in the form of whisky was freely used, and the other period comprises those cases in which no whisky was used. In this way I have been able to judge in what respect this alcoholic was of benefit to the patient. As a young physician, I saw whisky given freely to children in Bellevue Hospital, so that later as attending physician I came to favor its use for many years. In the past three years, whisky has been discarded entirely in the therapy of pneumonia. Up to 1909 all patients received more or less whisky. Then I gradually began to discard it, fearing to drop it altogether, so that, during 1911, 1912, 1913 and 1914, there was a certain proportion of cases, always increasing, in which whisky was discarded, until I finally dropped it entirely. Discarding whisky, in the case of young children in half teaspoonful and older children in teaspoonful doses, I gave exceedingly small doses of spiritus aetheris nitrosi to infants, a drop every three hours, to older children never more than 3 or 4 drops, and finally discarding this, as some infants would not take it, until from 1913 to 1914, of 132 cases of pneumonia, whisky or alcohol was used in only twenty, so that the change by which whisky was completely discarded was not made abruptly, but extended over a period of five years.

Among 632 cases of pneumonia of all ages treated by the administration of medicinal doses of whisky, there were 144 deaths, a mortality for all ages of 22.8 per cent., including the infants below 3 months and below 1 year of age. Among 719 cases treated without whisky (alcohol), there were 104 deaths, a mortality of 14 + per cent. During the years in which whisky was used in all cases, whether severe or slight, namely, the years 1906 to 1909 inclusive, there were 429 cases with eighty-one deaths, a mortality of 18 + per cent. It may be thought, and with justice, that, in the years in which alcohol was and was not used, the high mortality with alcohol might have been due to the fact that the more severe cases received the whisky; hence the higher mortality. That is only partly true; however, during the year 1912-1913, for example, of a total of 221 cases, only thirty-four were treated with alcohol; in the year 1913-1914, of 132 cases, only twenty were treated with alcohol. Thus the number treated with alcohol was steadily decreasing. We will admit for the sake of argument and conscience that only the more severe cases in late years received whisky or alcohol; hence the higher mortality. But the whisky did not enable me to save life. Therefore I discarded it.

During the years 1915 and 1916, whisky has been discarded entirely in the treatment of pneumonia and the results have been good. During 1915 and 1916 there were 391 cases. This comprises Series B of my cases, from birth to the tenth year, and above. Of

TABLE 7.—TOTAL NUMBER OF CASES TREATED WITHOUT ALCOHOL FOR THE YEARS 1915 AND 1916 (SERIES B)

	0-3 Mos.	3-6 Mos.	6-12 Mos.	1-2 Yrs.	2-5 Yrs.	5-10 Yrs.	Totals
No. of cases	3	24	53	100	81	74	335
No. of deaths	7	8	18	13	5	5	56
Total	10	32	71	113	86	79	391
Percentage of mortality	70	25	25	11	5	6	14

these, fifty-six resulted fatally, a mortality of 14 per cent. There were 113 patients of and below 1 year of age with a mortality of thirty-three, or 29 per cent. From birth to the third month there were in these two years ten patients, practically all new-born, with septic complications, with a mortality of seven, or 70 per cent. In all these cases the pneumonia was a manifestation of general sepsis. From the third to the sixth month there were thirty-two cases, with a mortality of eight cases, or 25 per cent., and from the sixth month to the twelfth month inclusive, seventy-one cases, with a mortality of eighteen, or 25 + per cent. These figures compare not only favorably with the 1,351 cases previously cited, but give

no support whatever for the alcohol treatment of former years, especially if we look at the percentage mortality: from the first to the second year, 113 cases with a case mortality of thirteen, or 11 per cent.; from the second to the fifth year, eighty-six cases with a case mortality of five, or 5 per cent.; from the fifth to the tenth year, seventy-nine cases, with a case mortality of five, or 6 per cent. These statistics prove beyond any doubt not only all the data as to the high mortality in the new-born period, but the benign nature of pneumonia in later childhood under careful nursing, and hold out no encouragement for the older methods of active alcoholic administration. The use of whisky in former years was not justified by the results attained. The complete disuse of alcohol has not harmed my patients.

Cold Air; Fresh Air.—In the treatment of pneumonia the rôle of cold fresh air has been exploited as though there were something in the freezing air that would act as a specific in bringing about a favorable result. I found by careful study that both infants and young children stand cold very badly. Some patients seem to struggle against its effect, instead of accepting the cold as a relief from their sufferings. Some infants, when placed warmly bundled up in a cold room with open windows, grow cyanosed, and the whole system seems depressed. Rarely will an infant placed in the cool, open room react in a manner to make us feel that we are helping the patient. The pale infant becomes blue, the ruddy infant, pale. I have finally concluded that the middle course of giving fresh air which, if possible, is at a temperature that is not uncomfortable to the nurse, is the correct procedure. If we can place the patient in a room in which the incoming air passes over a warm radiator, it is probably the ideal condition. The air in the sick room should be fresh and crisp, but not icy cold. Cold is not specific in the treatment of pneumonia; certainly not cold air.

Hypodermic Medication.—Wherever it is possible, I set great store by the hypodermic method of medication, properly carried out by a careful nurse, avoiding skin infections. The use of camphor (which is not at all new) suspended in oil, with or without caffein, has proved the most satisfactory from a clinical standpoint. Camphor is a mild cardiac stimulant. After its injection I have found the pulse stronger and more forceful, but only for a short time. I regard it, like all the resins and balsams, as a mild expectorant, so that its use is justified in two directions. I have never seen any harm result to the kidney from proper dosage. It is difficult to lay down the exact dosage, but camphor suspended in oil may be given subcutaneously at three hour intervals, a grain for every year of the age, up to 3 or 4 grains. It may be given to the new-born in doses from one-fourth to one-half grain. Caffein is also a useful remedy. It is one of our best cardiac stimulants, but we must remember that it has been shown to be, in large doses, a poison. Therefore caution must be exercised in its use.

Digitalis has lately been brought into notice in the treatment of pneumonia. Given in adequate doses it is useful. The tincture may be used in therapeutically effective doses, but in cases in which a tachycardia develops with threatened breakdown of the heart with enlargement of the liver, the tincture is of little avail. In these cases digipuratum, given intravenously in full dosage twice in twenty-four hours, is of great efficacy. It is the only agent that will avert a cardiac collapse.

SUMMARY

It is evident that I regard the treatment of pneumonia at the present day as symptomatic, and that I believe pneumonia to be a disease in which clinical experience must go hand in hand with good judgment, in order that the patient may not be injured while making the fight for recovery. As to serums or vaccines, they have been even less successful in the final results in children than in adults. Their use is still in a developmental stage.

30 East Sixty-Second Street.

TOXIC FACTORS OF SOME OF THE COMMON ANESTHETIC SUBSTANCES *

EVARTS A. GRAHAM, M.D.

MASON CITY, IOWA

Much of the popular dread of an operation is based on fear of the anesthesia. The laity regards the possibility of a failure to regain consciousness as the chief hazard of most operations. This fear, of course, is traditional from the time when it was not infrequent for patients to die from a badly conducted anesthesia, while the operation was in progress. Surgeons also, even up to very recent times, felt that about the only danger from a narcosis was that of immediate death. The recognition of the condition of so-called "late chloroform poisoning" performed the very important function not only of awakening surgeons to the fact that death from chloroform may occur two or three days after its administration, but also of calling attention to a large number of toxic effects directly ascribable to the induction of general anesthesia, no matter by what anesthetic drug. Many of the unexpected, disastrous results following apparently simple operative procedures are more or less directly the result of the narcosis, even though these results may not be immediately apparent. A consideration of the possible toxic factors of the anesthetic agents, therefore, is highly important in serving to prepare the way for the avoidance of many of these disasters, and in insuring a greater margin of safety to the patient who undergoes an operation.

The phenomenon of narcosis is always accompanied by a condition of diminished oxidations. It therefore always indicates a condition of more or less severe asphyxia of the tissues, even if the frequency and depth of the respirations of the narcotized subject are normal. This has been abundantly shown by the work of Verworn,[1] Mathews,[2] Tashiro[3] and others. Verworn has even concluded, although probably incorrectly, that the phenomenon of narcosis is the same as cellular asphyxia. In 1912[4] I called attention to the close similarity which exists between the lesions of so-called late chloroform poisoning and those which can be induced by direct asphyxia. J. Loeb[5] has shown that an asphyxiated tissue always becomes

* Read before the Section on Surgery, General and Abdominal, at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

1. Verworn: Narkose, Jena, Gustav Fischer, 1912.
2. Mathews: The Action of Ether on an Anaerobic Animal Tissue, Jour. Pharmacol. and Exper. Therap., 1910, **2**, 231.
3. Tashiro: A Chemical Sign of Life, University of Chicago Press, 1917.
4. Graham, E. A.: The Pathogenesis of the Hemorrhagic Diseases of the New-Born, Jour. Exper. Med., 1912, **15**, 307.
5. Loeb, J.: Arch. f. d. ges. Physiol., 1898, **71**, 457.

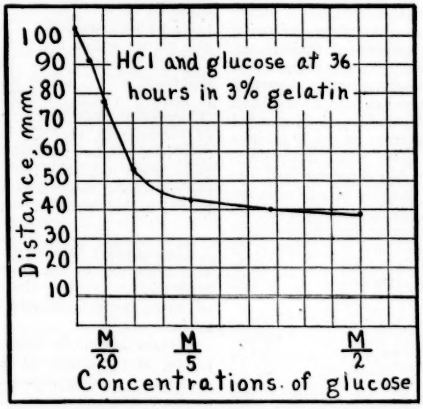
acid. It is not surprising, therefore, that every surgical anesthesia induces many of the signs of an acid intoxication. As is well known, also, an existing acidosis is always aggravated by a surgical anesthesia.

The power of the various common anesthetic substances to induce severe toxic effects varies greatly. For example, ether and nitrous oxid cause these changes much less readily than does chloroform; and nitrous oxid has only slight tendency to induce them. The explanation of the increased toxicity of chloroform over ether and nitrous oxid is probably to be found in the fact that during the breakdown of chloroform in the body hydrochloric acid is formed. Neither nitrous oxid nor ether can yield a strong mineral acid in their breakdown. Therefore, chloroform, in addition to giving rise to an acidosis as a result of the narcosis asphyxia, actually yields a strong inorganic acid as well. The morphologic changes in the tissues characteristic of late chloroform poisoning, such as edema, hemorrhages, fatty changes and central necrosis of the liver, are probably really the effects of hydrochloric acid. I have given elsewhere evidence in support of this view,[6] which evidence may be thus epitomized:

1. It is well known that, in the test tube, chloroform, in the presence of oxygen and water, is readily decomposed into hydrochloric acid. This decomposition is expressed in the following equations:

$$CHCl_3 + O_2 \rightleftarrows COCl_2 + HCl$$
$$COCl_2 + H_2O \rightleftarrows CO_2 + 2HCl$$

It is reasonable to suppose, therefore, that in the tissues where available oxygen and water are at hand, each molecule of chloroform might yield three molecules of hydrochloric acid, if the decomposition were complete. That such a decomposition actually does occur in the body seems to be apparent from the following facts obtained in a study of the condition of so-called late chloroform poisoning.



Curve showing the inhibition of diffusion of hydrochloric acid in gelatin by various concentrations of glucose. It is noticed that the smaller concentrations induce relatively the greater inhibition. The tubes were kept at a constant temperature of 26 C.

2. Hydrochloric acid in suitable concentrations induces experimentally a picture similar to that of delayed chloroform poisoning. In dogs intraportal injections of from 10 to 25 c.c. of from one-seventh to two-sevenths normal concentrations of hydrochloric acid results in the development of changes in the liver which closely parallel those obtained with chloroform, such as necrosis, fatty changes, hemorrhages and edema.

3. Attempts to recognize the presence of free hydrochloric acid in the surviving livers of animals, in which the condition of late chloroform poisoning had been experimentally produced, resulted in a demonstration, by means of neutral red, of free hydrogen ion, and, by means of silver nitrate, of an excess of free chlorin ion. For various reasons, however, this finding cannot be taken as proof of the presence of free hydrochloric acid. It is merely an indication.

4. Since chloroform is the trichlorin substitution product of methane, and since the other chlorin substitution products can yield, outside of the body at least, the same number of molecules of hydrochloric acid that there are atoms of chlorin in their respective molecules, it seemed of interest to study some of these other products in relation to their respective ability to induce the lesions of chloroform poisoning. Theoretically, we should expect the series to run in this order on the basis of their respective powers to induce these changes:

$$CH_3Cl < CH_2Cl_2 < CHCl_3 < CCl_4$$

Only the last three substances were used to test this point. The accompanying table shows that the toxicity, or the ability of these substances to induce the lesions in question, is roughly proportional to the number of molecules of hydrochloric acid which they can yield in their breakdown outside the body. The theory, therefore, is shown to hold.

5. Alkali, when given to dogs in suitable concentrations simultaneously with chloroform, inhibits to a marked degree the production of the typical lesions by chloroform. This fact alone, of course, lends strong support to the idea that these lesions are effects of an acid intoxication.

6. Iodoform (CHI_3) and bromoform ($CHBr_3$), which are similar in structure to chloroform ($CHCl_3$), likewise produce lesions which are indistinguishable from those of chloroform. In their cases, however, we should expect to be dealing with hydriodic and hydrobromic acids, respectively, instead of hydrochloric. As a matter of fact, positive evidence is present that after the administration of these substances these acids are actually formed in the body, for their neutral salts are found in large quantities in the urine, just as after the administration of chloroform an excess of chlorids is present in the urine.

RELATIVE TOXICITY OF SUBSTANCES

Substance	Minimal Fatal Doses per Kilogram of Rabbit Gm.	Minimal Fatal Doses Expressed in Grammolecular Concentrations
CCl_4	0.053	0.000344
$CHCl_3$	0.085	0.000711
CH_2Cl_2	0.147	0.001610

7. Strong evidence is also at hand to show, as would be expected, that the halogen substitution products of ethane act in a similar manner to those of methane both in producing the same type of lesions and in yielding their respective halogen acids, hydrochloric, hydrobromic and hydriodic acids, in their breakdowns

6. Graham, E. A.: Late Poisoning with Chloroform and Other Alkyl Halides in Relationship to the Halogen Acids formed by their Chemical Dissociation, Jour. Exper. Med., 1915, **22**, 48.

in the body. The substances used to determine this fact were: ethyl chlorid (C_2H_5Cl), ethyl bromid (C_2H_5Br), ethyl iodid (C_2H_5I), and ethylene bromid ($C_2H_4Br_2$).

8. That the poisonous effects of chloroform are due rather to the hydrochloric acid which it yields than to the mere presence in its molecule of three atoms of chlorin is shown by the fact that chloral hydrate ($CCl_3—CH(OH)(OH)$), which also possesses three atoms of chlorin, is incapable of producing the lesions typical of chloroform poisoning. This substance is excreted from the body as trichlor-ethyl-glycuronic acid and is therefore incapable of forming appreciable amounts of hydrochloric acid in the body.

It is an interesting and well known fact that an organ which is richly supplied with glycogen is much less susceptible to the action of various poisons. This protective action of glycogen has frequently been shown in connection with those intoxications which are associated with an acidosis. In a previous article[7] I have shown that the remarkable resistance of young pups to the production of late chloroform poisoning is due to the high glycogen content of their livers. The question of how glycogen protects against these various poisons has never been satisfactorily answered. In an attempt to study this question, and on the basis of a brief observation by Bechhold and Ziegler,[8] I have been able to show[9] that glucose markedly inhibits the diffusion of acids through gels. Since, in the presence of an acid, glycogen is readily depolymerized into glucose, it is probable that, in the case of acid poisons, the protective action of glycogen is really carried out by glucose. It is therefore probable that this property which glucose possesses of inhibiting the diffusion of acids through gels is at least somewhat concerned in the protection of the cell or certain phases of the cell against acid poisons (see chart).

Up to this point only those toxic factors of anesthetics have been discussed which deal with the formation of acids within the body. There are many other factors which doubtless are of importance, some of which, like acetone for example, are formed secondarily and probably as a result of the inhibition of oxidations during the course of the narcosis. But besides these, we must consider certain points which are concerned with the fundamental chemistry of the substances which induce anesthesia, and which may be more or less intimately related to the whole problem of the nature of the state of anesthesia itself. I refer now to the dissociation products of these substances other than acids. Limitations of time will not allow more than a mere indication of these.

For a number of years before his death, J. U. Nef[10] had been accumulating a mass of evidence to show that many carbon compounds owe their reactivity to a dissociation of such a type that a product containing unsaturated carbon is formed. The tremendous reactivity, and therefore probably the toxicity of the cyanids is probably due to the fact that cyanid with unsaturated or bivalent carbon is always present in any cyanid solution together with that which is saturated and inactive. This may be shown as follows:

$$K—C\equiv N \rightleftarrows K—N=C\rightleftarrows$$

Likewise alcohol, ether, the alkylhalids, and other substances, probably dissociate in such a way as to yield bivalent carbon, thus:

$CH_3CH_2OH \rightleftarrows$	$CH_3CH\rightleftarrows$	+	HOH[11]	
Alcohol (ethyl)	Alkylidene (Unsaturated carbon component)		water	
$(CH_3CH_2)_2O \rightleftarrows$	$2CH_3CH\rightleftarrows$	+	HOH	
Ether (ethyl)	Two alkylidene		Water	
$CH_3CH_2Cl \rightleftarrows$	$CH_3CH\rightleftarrows$	+	HCl	
Ethyl chlorid	Alkylidene		Hydrogen chlorid	
$Cl_3HC \rightleftarrows$	$Cl_2C\rightleftarrows$	+	HCl	
Chloroform (trichlormethane)	Alkylidene		Hydrogen chlorid	

It has long been considered that carbon monoxid likewise owes many of its properties to its unsaturated carbon $O=C\rightleftarrows$

Since both the cyanids and carbon monoxid produce effects on the body similar to those of the common anesthetic substances, it is very interesting that probably they all are capable outside of the body of dissociating in a similar manner to yield an unsaturated carbon residue. That this type of dissociation also occurs within the body, at least in the case of the alkylhalids, seems to be indicated in the work described above, which shows that hydrochloric acid is formed within the body during the breakdown of chloroform, hydrobromic acid during the breakdown of bromoform, etc. It is therefore highly probable that, in a manner analogous to the case of the cyanids and carbon monoxid, the toxic properties of many of the anesthetic substances are partly due to the unsaturated carbon residue.

SUMMARY

The common anesthetic substances yield toxic products indirectly by the formation of various asphyxial acids and by favoring the formation and accumulation of many toxic products of metabolism other than acids.

Certain anesthetic substances, notably those which belong to the group of alkylhalids, in addition, are capable of yielding strong mineral acids in the tissues as dissociation products. For example, chloroform is broken down in such a way as to yield hydrochloric acid in the body.

The common anesthetic substances are capable of dissociating in a manner which yields bivalent, or unsaturated, carbon. The toxicity of the cyanids and carbon monoxid probably depends largely on their property of dissociating in a similar manner. It is therefore probable that some of the effects of the anesthetic substances are due to their unsaturated residues.

ABSTRACT OF DISCUSSION

DR. C. HENRY DAVIS, Chicago: I have been particularly interested in the study of chloroform, ether and nitrous oxid-oxygen as regards their relative toxicity during pregnancy and labor. Using a specially constructed chamber, these anesthetics were administered to groups of pregnant and non-pregnant guinea-pigs under very similar conditions and the results correlated with clinical observations. Two of the four guinea-pigs subjected to six hours of chloroform anesthesia died in convulsions and showed the typical central necrosis of the liver, such as has been described. Young guinea-

7. Graham, E. A.: The Resistance of Pups to Late Chloroform Poisoning in Its Relation to Liver Glycogen, Jour. Exper. Med., 1915, **21**, 185.

8. Bechhold and Ziegler: Die Beeinflussbarkeit der Diffusion in Gallerten, Ztschr. f. phys. Chemie, 1906, **56**, 105.

9. Graham, E. A.: To be published.

10. Nef, J. U.: Dissociationsvorgänge bei den Alkyläthern der Salpetersäure, der Schwefelsäure und der Halogenwasserstoffsäuren, Ann. d. Chem., 1889, **309**, 126.

11. The sign $\rightleftarrows$ in these formulas is equivalent to "is in equilibrium with." The sign $\rightleftarrows$ signifies "free" bonds or valences; in other words the carbon atom to which they are attached is what Nef termed "bivalent carbon."

pigs, born after the mothers had one hour of chloroform-oxygen anesthesia, had very fatty livers. Oxygen may lessen the danger of chloroform to the mothers, since the respiration is always much slower and more shallow than when ether or nitrous oxid-oxygen is administered.

Ether and nitrous oxid-oxygen never produce tissue changes such as we have shown in chloroform poisoning. They do interfere with cell metabolism, and when given over long periods produce changes which are of the type found after simple asphyxiation. Dr. Graham has given us a very clear and logical explanation for this difference in toxicity of the various anesthetics.

CHRONIC DIARRHEAS DUE TO ENTERO-COLONIC CONDITIONS*

JULIUS FRIEDENWALD, M.D.
Professor of Gastro-Enterology, University of Maryland School of Medicine and the College of Physicians and Surgeons
BALTIMORE

It is a rather difficult task to arrange a satisfactory classification of the different varieties of chronic diarrheas due to enterocolonic conditions. This is largely due to the fact that with improved methods of investigation the etiology of hitherto undetermined forms is gradually being made clear, necessitating frequent changes in classification. Since the term "diarrhea" is used only for a symptom denoting the passage of liquid feces, it not only embodies those forms due to disease of the gastro-intestinal tract, but it is also indicative of those varieties due to conditions arising outside of this tract, such as one commonly observes in toxic states, as is seen, for instance, in nephritis or in the disturbances of internal secretion.

I have followed the accompanying classification in the study of my cases, although I recognize fully its incompleteness:

1. Simple catarrhal enterocolitis.
2. Ulcerative colitis:
   (*a*) Amebic.
   (*b*) Bacillary.
   (*c*) Tuberculous.
   (*d*) Syphilitic.
   (*e*) Carcinomatous.
3. Mucous colitis.
4. Simple colonic infections.
5. Intestinal stasis.
6. Chronic appendicitis.
7. Disturbances of the glands of internal secretion:
   (*a*) Pancreas.
   (*b*) Suprarenal.
   (*c*) Thyroid.
8. Diarrheas of toxic and undetermined origin.

It is sometimes important to differentiate a diarrhea originating from disease of the large bowel from that of the small bowel. This is especially important when surgical interference is contemplated.

In catarrh of the small bowel, the diarrhea is less intense and the pains are colicky in character. The feces are more acid, and contain unchanged bile and undigested food particles.

Mucus is frequently absent, or is present in small amount, and then admixed with the stool. In those instances in which the diarrhea originates in the large bowel, the pain is usually associated with marked tenesmus, and is less frequent than in catarrh of the small bowel. The tenderness on pressure is usually felt along the course of the colon, and not in the umbilical region. Gastric disturbances are usually absent in this affection, and the stools rarely contain undigested food. They are ordinarily alkaline and contain mucus and altered bile.

In this study of my cases of chronic diarrheas I have selected 100 cases, and these have been most carefully investigated. Thirteen cases represent those forms due to achylia gastrica, which cannot be considered here, while thirty-one represent the variety known as catarrhal colitis.

SIMPLE CATARRHAL ENTEROCOLITIS

In all of these cases there was a persistent diarrhea extending over several years, with frequent acute attacks associated with pain and tenderness over the colon; in every instance there was considerable mucus in the stools, together with blood at times. I am firmly of the opinion that the presence of mucus alone in the stools is not sufficient to warrant a diagnosis of catarrhal enterocolitis without the presence of the other symptoms already mentioned. In this disorder the characteristic appearance is usually presented by proctoscopic examination.

It was interesting to note the nature of the gastric secretion in these cases of chronic catarrhal colitis. In eighteen, the gastric secretion was quite normal; there was a hyperacidity in six, and seven presented an achylia gastrica. It is important in all cases of diarrhea associated with an achylia gastrica to determine whether or not the bowel is likewise affected, since in these instances treatment of the gastric disease alone is not sufficient to effect a cure. In the study of our cases of catarrhal colitis, the Schmidt test diet has been of considerable value. On this diet the stool is observed to be liquid or semisolid; rather large, and somewhat brown or light in color, containing more or less mucus in large or small flakes. It has a very fermented odor and contains many gas bubbles. To the naked eye there are no undigested meat fibers, and no excess of fat is present. Microscopically nothing of consequence is noted. The specimen is usually alkaline, and the sublimate test presents a normal coloration. When the stool is placed in the incubator, more or less gas is generated, indicating slight decomposition or putrefaction. Examination for dissolved protein is lightly or markedly positive.

The treatment of the various forms of catarrhal colitis is usually satisfactory. Diet plays an important rôle in this direction. In addition, most of these patients do best when treated with irrigations. Of these, solutions of potassium permanganate, boric acid, gelatin or instillations of protargol are most valuable. The internal administration of large doses of tannigen or bismuth subcarbonate is helpful.

AMEBIC DYSENTERY

Of the ulcerative forms of colitis, the amebic occurred in eight cases in this series. Since this is not an infrequent form of dysentery, the ameba should be looked for in all cases of chronic dysentery. These organisms are best observed in the scrapings obtained from the ulcerations through the proctoscope. The treatment with quinin irrigations and the administration of emetin need scarcely be mentioned here.

According to Nixon, the use of chaparro amargosa is valuable as a substitute for emetin in this disease. Cases that have resisted the emetin treatment have

* Read before the Section on Gastro-Enterology and Proctology at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

been controlled, according to him, by means of this drug. The plant is a small thorny bush indigenous to Texas and in Mexico. Nixon employs the drug as an infusion in doses of from 6 to 8 ounces.

BACILLARY DYSENTERY

There was present in our series but one case of bacillary dysentery. The diagnosis of this condition is usually difficult. The *Bacillus dysenteriae* may occasionally be found in the stools, and when obtained will agglutinate with the blood serum. Whenever amebas cannot be discovered in the stools, this condition must be suspected, and attempts should be made to isolate the organism. According to Shiga this disorder is only a subsequent disease in which it is impossible often to isolate the dysenteric bacillus. In this condition the feces are found mixed with mucus and the débris from the ulcerated areas. Most frequently, however, the mucus is simply hanging to the feces, not being intimately mixed with it. The result of treatment of these cases is not always gratifying. In addition to diet and rest, the best results are obtained by means of irrigations. Of the remedies to be utilized for this purpose, silver nitrate solution (1:500 or 1:1,000), potassium permanganate and tannin are probably the best. Internal medication is usually of little value. Of the remedies that may be employed, bismuth is of some value. In many of these cases, occasional mild purges are sometimes helpful. Of these, castor oil or liquid petrolatum oil is the best.

TUBERCULOUS ULCERATIONS

Tuberculous ulcerations occurred in four instances in our series. These are exceedingly frequent complications of chronic pulmonary tuberculosis and especially frequent as a late manifestation of this disease. This condition is not always associated with a persistent diarrhea, and alternating constipation and diarrhea is not infrequent. Diarrhea is more pronounced when the lesions are in the lower bowel. Pain is the most frequent symptom, occurring usually in the lower abdomen, and it is often most severe before the passage of a stool or after taking food. The stools may be very frequent, and at times may contain small quantities of blood. It is unusual, however, to note the passage of large quantities of blood. Mucus in variable quantities is often admixed with the feces. The finding of tubercle bacilli in the stools is of little diagnostic value, for these organisms are frequently present in patients affected with pulmonary tuberculosis having these organisms in the sputum. Of great interest are those cases of localized tuberculosis occurring about the ileocecal region.

In this condition a definite mass is found frequently resembling a malignant growth. In these cases, in addition to the paroxysmal pains, diarrhea alternating with constipation is observed. In two cases of this variety an operation was performed by Dr. Finney for me with most gratifying results. The treatment of the diarrhea observed in intestinal tuberculosis is exceedingly difficult. Diet and rest play a most important rôle in this direction. Physiologic sodium chlorid irrigations may at times be beneficial, but sooner or later it becomes necessary to administer opium by mouth or by bowel.

SYPHILITIC ULCERATIONS

Syphilitic ulcerations of the small intestines are rarely observed. The most common lesion of this disease is in the rectum. This occurred in two of the cases in my series. When the affection involves the small intestine, the symptoms are those of an ordinary intestinal ulceration, that is, persistent and painful diarrhea remaining unrelieved by the ordinary treatment. When involving the rectum, the picture is so characteristic as to render the diagnosis exceedingly simple. The indurated edges of the elevated ulcer with the smooth base, together with gradually increasing stenosis, is ordinarily sufficiently characteristic to permit of a definite diagnosis.

CARCINOMATOUS ULCERATIONS

This condition occurred in two cases of my series. Carcinoma of the intestine more frequently occurs in the colon and in the rectum, though the disease may occur in the duodenum, jejunum and ileum. Symptoms of obstruction are among the early signs of this affection. These are manifested by attacks of colic associated with constipation. As the disease advances, the contracted area sometimes ulcerates, and constipation may give rise to a marked diarrhea with mucopus and blood in the stools. Of interest in this connection is carcinoma of the pancreas, which is frequently accompanied by a special train of symptoms pointing directly to the affection. In the earlier stages of this disease, the symptoms referable to disorder of the gastro-intestinal tract are manifested. These are especially loss of appetite, nausea and vomiting. There is usually constipation, which is rapidly transformed into diarrhea. The diarrhea becomes more and more intense, and at times fatty stools are observed. After a longer or shorter period of time jaundice appears, which gradually becomes more and more pronounced. The urine at times contains sugar; the liver enlarges and becomes nodulated, and further evidences of malignancy are noted by the cachexia. This affection is of such frequent occurrence that whenever a persistent diarrhea is observed in persons over 40 years of age which cannot be accounted for by the usual causes, carcinoma of the pancreas should be borne in mind.

MUCOUS COLITIS

Mucous colitis is such a well known affection that but little new can be said concerning it. There are three theories regarding the etiology of this affection: first, that it is entirely a nervous affection and that the mucus formed is purely a nervous hypersecretion; second, that it is due to a catarrh of the bowel, and thus has invariably an anatomic basis, and third, that the disease is due both to a nervous irritation and to a catarrhal condition.

Mucous colitis is always associated with evidences of disturbance of the autonomic nervous system, and there are present the signs of a vagotonia. While constipation is usually a prominent symptom, diarrhea is occasionally observed in this disease. This affection occurred in nine cases of our series. In addition to the usual treatment of this disorder, I should like to direct attention to the use of autogenous vaccines, which may be of great benefit in some instances.

COLONIC INFECTION

Among the infections of the bowel that may give rise to persistent diarrhea (not including the amebic and bacillary forms already referred to) there are various other micro-organisms and parasites that may play an important rôle in this connection. Of these may be mentioned certain intestinal worms, including

tapeworms, whipworms, flukeworms, strongyloides and various flagellate parasites. The diagnosis of any of these conditions can be readily made by a careful examination of the stools. These infections occurred in six cases of my series.

INTESTINAL STASIS

There are three well marked varieties of intestinal stasis that may give rise to persistent diarrhea. In the first form, the stasis is due to a dilated cecum in connection often with a dilated colon, which is frequently prolapsed and which retains its contents for an unusually long period of time. On account of the retention, fermentation is produced, which is followed by diarrhea. In the second form, on account of the prolonged retention, the fecal masses are channeled, through which the stools pass in a diarrheal form. In the third form, the diarrhea is due to a spastic condition of the bowel giving rise to a frequent expulsion of small round scybala.

The lower bowel is constantly filled with these masses, which produce an irritability of the bowel and frequent desire for defecation. In all of these forms, roentgen-ray and proctoscopic examinations will quickly clear up the diagnosis. Intestinal stasis as a cause of diarrhea occurred in eight cases of my series.

CHRONIC APPENDICITIS

Although diarrhea is rarely observed as a symptom of chronic appendicitis, I am convinced that appendicitis occasionally gives rise to this symptom notwithstanding the fact that these forms of diarrheas are usually attributed to other disturbances, such as colitis or disease of the cecum. This condition occurs most frequently when the inflamed appendix is plastered against the bowel. In one of my cases the nature of the trouble was revealed by the roentgen ray. There were no symptoms definitely relating to the appendicitis, except the diarrhea. In the other case, the patient developed an acute attack of appendicitis. The appendix was removed, and there were no further symptoms. There were three cases of this affection in my series.

DISTURBANCES OF THE GLANDS OF INTERNAL SECRETION

The diarrhea accompanying the disorders of internal secretion need be considered here only so far as these may provoke changes in the intestinal mucosa, on account of which fermentation and diarrhea may be produced.

In the thyroid forms it is probable that an increased peristalsis is at hand in most instances. It is also very likely that many cases of so-called nervous diarrheas on careful examination will be found to belong to this class. In the pancreatic forms, large fatty stools, usually soft but occasionally diarrheal, aid us in reaching a correct diagnosis. In the suprarenal forms, the diarrhea is due to a disturbance of the internal secretion of this gland producing a hyperperistalsis. The intestinal secretions are not ordinarily disturbed in this affection. Five cases of diarrhea due to disturbances of the internal secretions were noted in my series.

DIARRHEAS OF TOXIC AND UNDETERMINED ORIGIN

There still remains a class of diarrheas, the origin of which has not yet been fully determined in all instances. In this class are included those forms in which the irritation is transmitted through the circulation. I refer especially to the diarrheas of nephritis, gout, cirrhosis of the liver, and to the various circulatory disorders, as well as to certain other diseases, such as sprew and pellagra. In some of these instances a catarrhal condition is present, while in others no special lesion is produced and the changes that are observed in the intestinal canal are purely secondary lesions. Diarrhea of nephritic origin is probably due, in the larger proportion of cases, to the excretion into the bowel of irritating toxins, as is shown by the fact that the severity of the diarrhea varies with the exacerbations of the nephritic disease. In patients affected with chronic nephritis extending over a long period of time, uremic ulcers have been observed in both the small and the large bowel. In this series there were eight cases of diarrhea of toxic origin.

I have attempted briefly to describe some of the most important forms of diarrhea due to enterocolonic conditions. The diagnosis of some of these forms is exceedingly simple, while in the larger proportion of cases it is most difficult. It is highly important in all instances to make a thorough study of all features, utilizing all diagnostic measures to ascertain the underlying cause. Only in this way can therapeutic measures be instituted which may prove of the greatest avail.

RECTAL AND SIGMOID CONDITIONS IN CHRONIC DIARRHEA *

JOHN L. JELKS, M.D.
Fellow of the American College of Surgeons
MEMPHIS, TENN.

The conditions found in the rectum and sigmoid flexure in cases of chronic diarrhea differ very markedly, and they may be due to numerous causative factors.

1. They may be caused by a primary infectious agent, which may be an amebic, a bacillary or a flagellate infection, or some other infectious element which may persist over a long period of time.

2. The conditions may be due to the primary and some secondary etiologic factors, as when during the course of a proctocolitis, the primary cause of which was a bacillary or flagellate infection, the patient becomes infected with the pathogenic ameba. The case may be one primarily of amebic infection, which, though it has continued over weeks or months, or even years, may not have produced alarming symptoms, until some secondary infection ensues, which may convert a seemingly indifferent situation into one of alarm, with possibly fatal results.

3. They may be due to the primary pathology, which was produced by the primary etiologic element or infection, though the latter may have been controlled, or may have disappeared entirely; hence, we have observed very extensive rectocolonic ulcerations due primarily to the ameba infection and secondarily to a streptococcic invasion, and though we had controlled the ameba infection, as we believed, the mucous membrane slough has been so extensive that the ulceration persisted for a long time, and the natural result was that the diarrheal symptoms also persisted.

4. A chronic diarrhea has oftentimes been observed to persist after all primary etiologic factors and all

* Read before the Section on Gastro-Enterology and Proctology at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

primary pathology have disappeared. This, I believe, occurs most often as a result of a late pathologic condition, such as adenomas, syphilis, and newly formed membranes.

5. There are also contributory physical and systemic diseases and conditions in which a persistance of the diarrheal symptoms are found. In some of these the rectum may present only a red and glazed appearance, or may appear quite normal macroscopically. At this point I might mention, for the purpose of discussion, some cases of so-called mucous colitis, which have followed certain operations, or which have persisted long after an intestinal infection has been controlled, and all ulcers in the rectum and sigmoid have healed, but if the abdomen is reopened, there may be found, as I have observed in some cases, a pericolic veil-like process extending over greater or less areas of the sigmoid colon. These veils are very delicate in structure, and are not closely attached to or adherent to the wall of the intestine. To these also may be due the kinks that I have found in some such cases of mucous colitis. With this class of cases I might also associate the persistent and almost uncontrollable diarrheas of cirrhosis of the liver, and those of diabetes and acidosis.

It has appeared to me a rather remarkable fact that in all the voluminous writings on the subject (chronic diarrhea) I have found very few references to even the gross pathology. Owing to the sudden and continued illness of an able pathologist who had promised assistance, I have been forced to omit minute pathology, which I believe is of importance and would have been of rare interest.

The conditions found in the rectum and sigmoid in chronic diarrhea are dependent on other factors than the chronicity of symptoms, for the diarrhea may persist long after the pathologic condition in the rectum and colon, which were the primary causes of the diarrhea, has disappeared.

The primary etiologic factor is usually some acute infectious agent; thus, the bacillary infections may continue for a period and the severity of the resulting inflammation may produce erosions and ulcerations, which do not always heal promptly, even though the infectious agent has been destroyed or neutralized. When this is the case, however, we may be confident there is a mixed infection, and in these conditions the streptococcus has played a damaging contributory rôle. In this type of cases, we observe erosions of the epithelial layer, or more or less extensive casts of false membrane may be exfoliated with apparently the entire epithelial layer, or the mucous membrane over great areas may be sloughed off at one time. It must be easily understood, therefore, that recovery from the conditions just described would be necessarily slow, and that for this reason the symptoms would continue to persist. If the infection was primarily amebic, we should expect to find and really do find a more thickened rectal and sigmoid wall, and, too, the rectal valves will have become thickened and unyielding on account of the long continued inflammation, ulceration and fibrosis. The mucous membrane is thick and congested. The intestine does not appear so edematous as is the case in the acute primary processes. The mucosa is covered with a mucopurulent or sanguinomucopurulent coating, underneath which the mucosa is more extensively damaged than would appear, until the coating is washed or rubbed off, when the real extent of gross pathology becomes apparent.

Conditions which serve to stamp a case as a very chronic one are the alternate hypertrophic and atrophic areas, and in some cases I have noticed so much fibrous infiltration of the intestinal wall that stenosis and valvular obstipation have resulted.

On the introduction of the proctoscope, I have observed that the rectum, and less often the sigmoid colon, is covered with a mucopurulent coating, and when this is wiped away, the mucous membrane appears eroded in spots, or more or less discrete ulcers with oftentimes ragged edges will be seen. Oozing appears quite general over these areas, or in other instances the rectal mucosa may seem to be intact, with the exception of a few circinate lines. In some very chronic cases that I have examined, no definite pathology could be found in either the rectum or the sigmoid, except the alternately atrophic and hypertrophic areas of the mucosa previously mentioned, but this was usually in or during a period of abatement of symptoms, when the infectious agent, which was the ameba, was in the encysted state and not creating much disturbance.

The distinctive features I have observed between the amebic rectum and sigmoid colon and the pellagrous or bacillary conditions of the intestines are that in the former the mucous membrane, as previously stated, appears thicker and more edematous and the ulcerations have proved more destructive to the deeper layers, whereas, in both the bacillary and the pellagrous infections the erosions appear more superficial, there is less edema, except in the very acute conditions, and the oozing is from every surface, as if the vasoconstrictors were paralyzed and the blood was oozing from every capillary. Now, while this is the rule, there are marked exceptions; in fact, in some cases the pathology in the rectum and sigmoid was very extensive, as extensive as I have observed in any amebic case.

The conditions found in some cases must necessarily be remittent or intermittent in their severity, otherwise these patients would rapidly become exsanguinated or septic or both, as in fact some do, but apparently with no other treatment than rest, the elimination of carbohydrate diets and the substitution therefor of a diet of milk and eggs, which diet does not supply in the intestinal laboratory a good culture medium, the hemorrhage ceases, the diarrheal symptoms abate, and even constipation may supervene. The intestinal mucosa then assumes a pink or red and glazed appearance, and may for a time thereafter appear quite normal, until the next seasonal recurrence, when the same unhappy course ensues.

If the rectum and sigmoid are examined from time to time between these recurrent attacks of pellagrous diarrhea, the conditions will be seen to vary between these two extremes just described, or the intestine may be congested and coated with mucus, and, after this mucus is wiped away, pin-scratch or circinate lines or discrete erosions may be seen. The intestine may appear blanched, owing to the low condition of the hemoglobin and the inanition, yet, with the recurrence of symptoms the blush and the ooze reappear on both the mucous and serous surfaces. Not only is this the case with the rectum and the sigmoid flexure, but this is the condition we find throughout the colon, including the appendix, and to a certain degree this blush is observed throughout the intestinal tract. I have never observed ulcerations above the cecum in these cases, but the appendix quite often suffers and occasionally

perforates. When the intestine is ulcerated the rectum and the sigmoid have always appeared to suffer the greatest degree of pathology.

A condition follows, or is associated, in a limited number of these chronic intestinal infections, amebic and pellagrous or bacillary, which may give rise to a more or less persistent diarrheal disturbance. I refer to adenomas and syphilitic condylomas. The diarrhea will usually persist as long as these growths remain; especially is this true when adenomas are present in numbers, and their removal affords prompt relief. In some of my amebic cases I have observed these adenomas in great numbers, and in one pellagrous case in which I recently performed an appendicocecostomy one of the very large adenomas sloughed and came away.

Some of these tumors have been reported malignant by able pathologists; yet, after their removal with the curet or cautery they have never recurred. Their most frequent location has appeared to be either on or at the base of the rectal valves; however, I have observed them studding both the rectum and sigmoid colon in great numbers.

I have observed in many instances a mucous diarrhea persist for months and years after a primary infection and pathology had disappeared from the rectum and the sigmoid, but a pericolitis had developed, which resulted in the formation of pericolic veils and kinks. The rectum and the sigmoid may appear quite normal in these cases, and no complaint of pain or disturbance is made that could be referred to the lower intestine. These pericolic veils, I believe, are more often found in the South, where infections of the intestine are more common and especially pellagra.

I do not wish to be misunderstood or misquoted in regard to this subject, for I do not refer to such conditions as the bloodless fold of Treves, which I believe are of a different origin and are productive of stasis, while these veils are more often associated with so-called mucous colitis. These constitute a late pathology; hence, in the majority of these cases the rectum and the sigmoid appear normal.

ABSTRACT OF DISCUSSION*

ON PAPERS OF DRS. GANT, FRIEDENWALD AND JELKS

DR. CHARLES D. SPIVAK, Denver: We have neglected physical therapeutics. It took a century, probably, before we found out that air is a good therapeutic agent. We all agree that rest is a therapeutic agent. So is work. All our functions are alternating between rest and work, and yet we do not know how to use rest and work as therapeutic agents. In acute cases of diarrhea hardly any one thinks of prescribing a diet at the first visit. In a case of acute vomiting, no sane person would insist on feeding his patient. The physician would rather order no nourishment, in spite of the great concern, perhaps, of the relatives that the patient has been starving for ten or fifteen hours. When we come to chronic cases of diarrhea or vomiting every writer speaks of a "suitable diet," and nobody knows exactly what a suitable diet is. A sufferer from lung disease uses a physical agent, namely fresh air. The modification of the quality and quantity of the air makes it a therapeutic agent. In chronic diarrheas, the stomach and intestines are irritated. The introduction of food adds insult to injury. It is rational to employ the physical therapeutic agent, rest. Modify the quantity of rest. Leave the intestines and stomach alone for a day, for two, for three, for ten if necessary. I have not yet seen a case of diarrhea, when not complicated by severe pathologic conditions, that would not yield to absolute rest, and absolute rest cannot be secured except the stomach and intestines are not functionating in their digestive capacity. The principle of rest applies to any other organ of the body when irritated, bruised or broken. There is no need to fear having patients abstain from food for one day or ten days. The treatment of appendicitis and peritonitis has taught us that we can keep our patients without food for weeks. The more recent treatment of diabetes by starvation is another plea for the efficacy of rest or abstinence from food as a therapeutic agent of great value.

DR. CHITTENDEN HILL, Boston: The duty of the large intestine is the absorption of water from the waste. In the colon absorption is accomplished by reversed peristalsis, the water being thrown back into the caput coli where it is absorbed. Material on reaching the descending colon, normally, should be nearly as dry as in the rectum, but should not be so hard and inspissated that the mucosa of the rectum or sigmoid is injured. For obvious reasons civilized man has attempted to establish an artificial habit with respect to the function of defecation, so that one movement of the bowels daily has come to be regarded as normal. A more frequent occurrence is always an occasion for worry and is considered a diarrhea by most people.

The newer physiology of the intestinal tract teaches us that there are several periods throughout the day when peristaltic waves are excited, as by eating or drinking, that would result in defecation had we not almost from childhood disregarded these natural stimuli. In other words, were it not for the dictates of convenience, mankind would more closely resemble the higher animals in respect to emptying the bowels and not become resigned to a fixed routine of infrequent defecation.

DR. NATHAN ROSEWATER, Cleveland: Dr. Friedenwald's scientific classification points to a more rational therapy. I agree with Dr. Spivak that rest in essential. After using my abdominal plaster bandage for twenty years, I would not treat chronic diarrhea without supporting the abdominal wall with this bandage, whereby irritations and atonicity from ptosis are avoided. The surgeon uses splints to immobilize. So can we to advantage. By using hydrochloric acid over long periods in achylia the neuroglandular function of the stomach can be rested a long time with benefit and may finally refunctionate. Plenty of carbohydrate food gives the necessary alkali desired by Einhorn, so that in spite of added hydrochloric acid as an essential activator the blood content is undisturbed.

DR. FRANK C. YEOMANS, New York: Amebic dysentery in this latitude is very insidious and much milder than in the tropics. We very rarely see an abscess of the liver, gangrene or perforation of the bowel. A single course of emetin acts as does a single course of quinin in malaria. Resistant cystic forms may develop later on, and the symptoms recur unless several courses of treatment are given at intervals. After secondary infection of the amebic ulcers has occurred, emetin alone will no longer be efficient. Then we have to resort to irrigations either through the rectum, or an enterostomy, or else autogenous vaccines and other forms of treatment.

One other form of bowel tuberculosis to be emphasized is the hyperplastic. Tuberculoma cannot be distinguished clinically from a malignant growth. Preoperative diagnosis of the nature of this tumor is not essential, for we have a growth which is practically malignant and has to be removed surgically.

Dr. Friedenwald did not mention a serious form of colitis which is difficult to treat, namely, so-called hemorrhagic colitis. The chief symptom is frequent stools, consisting mainly of blood; the blood seems to ooze from the mucosa everywhere. The exact etiology is not known, but the pathology has been studied. I cured three patients with fluid-extract of krameria, alternating with argyrol, 25 per cent.

DR. J. RAWSON PENNINGTON, Chicago: We have heard today that diarrhea may be caused by pyorrhea, achylia, stasis, proctitis, overeating, etc. If this is true, and I believe it is, then diarrhea is a symptomatic or a secondary disease, and the treatment should consist in locating the primary cause

* The first paper in this symposium on "The Surgical Treatment of Chronic Enterocolonic Diarrhea," by Dr. Samuel C. Gant, New York, appeared in THE JOURNAL last week, page 1603.

and removing or correcting it, which is necessary to cure the trouble. But when a patient with diarrhea has all the conditions above mentioned, and more too, perhaps, how are we to differentiate and determine the one that is causing the diarrhea? This is the most important question of all. That settled, we will then know whether or not to starve the patient, advise marriage, do a colectomy or a sigmoidostomy, advise the wearing of an abdominal support or give bismuth, etc. But to follow or advise one or the other of these procedures before making a diagnosis is certainly not to be commended.

DR. ALFRED J. ZOBEL, San Francisco: The giving of frequent irrigations in colitis sometimes keeps up the diarrhea. Great caution must be used. The strength of the solution, and just what is used, is of vital importance. Even the use of a solution containing 1 grain of potassium permanganate to a quart (one of the drugs mentioned today as being of value in intestinal irrigation), when introduced through the sigmoidoscope so that we know it is in the sigmoid and not in the rectum at all, will soon cause griping pains in the abdomen, and the patient will desire to have a rapid evacuation of the bowels. I therefore say again, that in conditions in which we use irrigation, we may err by continuing the irrigations too long, and by using too strong solutions.

With Dr. Friedenwald I must also take issue, as he made the statement that it was easy to diagnose syphilitic ulcers of the rectum. I cannot do it, and all with whom I have spoken say that they cannot diagnose this condition easily. As a matter of fact I have found that it is very difficult to differentiate between beginning carcinoma and a syphilitic condition of the rectum.

DR. HORACE W. SOPER, St. Louis: Dr. Jelks mentioned the fact that infection may be limited to the rectum. I recall two cases in which the infection was limited to the rectum where irrigation had washed the infectious material higher and caused general colitis. In this connection the work done by Dr. Rosenberg with the powder insufflation method is interesting. The dry powder method used with the proctoscope will clear up these cases very rapidly. In experimenting with a large number of powders I have found that calomel is the best, inasmuch as it is the most antiseptic of all powders. It is absolutely nonirritating even to the mucosa of the anal canal. Calomel is especially efficacious in the treatment of hemorrhagic forms of proctitis and sigmoiditis.

In response to a question by Dr. R. W. Jackson of Fall River with regard to what precaution is used to prevent absorption of the calomel if it is used in large quantities, or frequently, thus causing calomel poisoning, I answered that calomel, even if used in large quantities in the rectum or sigmoid, is not absorbed. I have used very large quantities, as much as 3 to 4 drams at a time. I believe the reason for this nonabsorption is that the calomel is not broken up as it is in the stomach or small intestine, but that it acts merely as a local antiseptic powder in the lower bowel.

DR. HARRIS WEINSTEIN, New York: With regard to the symptoms of carcinoma of the intestine, we are accustomed to consider constipation as the first symptom, but this is not always the case. It is often not a question of constipation, but of retained stool in a section of intestine and then continuous diarrhea on account of the irritation brought about by putrefaction. I have seen any number of cases develop in this way—primarily diarrhea with three to four stools a day, the patient complaining only of distention and foul-smelling stools, but, with the exception of a possible achylia, no gastric symptoms. Appetite and digestion may be excellent. A month or two after the appearance of these symptoms a large mass may be detected in the intestine. Then only obstructive symptoms appear, due not alone to the tumor, but also to spasm caused by irritation of the mucosa adjoining the mass.

Diarrhea in chronic appendicitis is rather rare, but we do meet with cases in which there is diarrhea. Some of these cases terminate in acute gangrenous appendicitis. In pancreatogenous diarrhea the stool is so characteristic that it cannot be mistaken for any other condition.

DR. J. W. WEINSTEIN, New York: Although my predecessor, Dr. Weinstein, repudiates the starvation treatment, I shall give it the highest endorsement. The statement that patients will not stand for it is not in keeping with my experience. I have tried it for as long as three weeks and the people will submit to it. Of course, we must sometimes modify the treatment, as Dr. Spivak said. The surgeon makes a rectal fistula and gives rest to the colon. We can do that in a milder way. Just give the patient water instead of food, and in some patients the juice of three or four oranges a day. Recently I had a patient who had a large ulceration through the rectum. I explained to him that his bowel must be given a rest; that one way was by a surgical operation, namely, by severing the terminal ileum from the cecum, implanting it temporarily in the abdominal wall, this to be followed later by a second operation, or another way was by means of starvation. He submitted to the starvation method and I can report a favorable result in this case.

DR. DWIGHT L. MURRAY, Syracuse, N. Y.: We must always remember that only about 25 or 30 per cent. of the bowel elimination is the result of food, the débris of food, and that the balance of it is brought down from the stomach and deposited as ash or worn-out material.

DR. SAMUEL G. GANT, New York: When appendicostomy fails to relieve or cure chronic diarrhea usually the irrigations are too small or the bowel is always washed out with the patient in the same position, which prevents the fluid from reaching lesions on different sides of the bowel. The benefit derived from bowel flushing is due as much to the mechanical action of the fluid in ridding the intestine of toxins and irritating débris as to the contained chemical. I have obtained the best results with 2 per cent. ichthyol irrigations.

DR. JULIUS FRIEDENWALD, Baltimore: It is impossible in so short a period of time as was allotted to me to discuss all of the questions concerning the treatment of chronic diarrheas. In my paper I especially wished to call attention to the importance of etiology. It is very important, if the treatment is to be successful, to clear up the diagnosis; and it is therefore extremely important to study every case carefully, and as far as possible reach a conclusion as to the etiology.

In regard to the treatment of special conditions, I heartily agree with many of the speakers regarding the efficacy of rest in most forms of chronic diarrheas. As to absolute starvation, I have had no experience with this special form of treatment, though we all know the importance of diet in the treatment of chronic diarrheas, and of allowing just as little food as possible. The use of the abdominal support is very valuable, especially when there is the slightest degree of enteroptosis.

DR. JULIUS FRIEDENWALD, Baltimore: Regarding the use of emetin, I feel with Dr. Yeomans that it is necessary to repeat the treatment frequently; that one course is not sufficient, and one is forced to repeat the treatment every few weeks or months so as to secure permanent benefit.

DR. JOHN L. JELKS, Memphis, Tenn.: In attacks in which the diarrhea and toxicity are due to regurgitation into the ileum from the colon, physical rest of the intestine is important, of course. But there is not much rest if the intestine is infected and irritated by bacteria or by some other infectious agent; but if there is a hole in the intestine, by turning clean, or salt, or some aseptic water into it and washing out the irritating stimulus, I believe the more important rest is then made possible.

As to chapparo amargoso, that is very difficult to obtain in this country. I have had no experience with it. It takes a lot of it to conduct a few treatments, and it comes from Mexico.

As to emetin, do not be too sure the emetin kills the amebas. Be less sure the emetin acts as a destroyer of the amebas; be overly sure to cure the ulcerations resulting therefrom, the walls of which contain amebas. Moreover, there are fixed amebas, some cases of which no emetin will cure.

Bismuth in teaspoonful doses every three hours in courses in these chronic cases is appropriate. Formaldehyd-boric solution I know destroys every ameba it comes in contact

with. Iodin solutions are exceedingly beneficial in many cases. Do not use the irrigations too long or too strong. Sterile water solutions at times are better than strong solutions.

Syphilitic cases must always have salvarsan, if possible, before serious surgery is practiced. Vaccines, especially autogenous, are beneficial and indicated in many cases.

GASTRIC CONDITIONS IN SPASTIC CONSTIPATION *

WILLIAM G. MORGAN, M.D.

WASHINGTON, D. C.

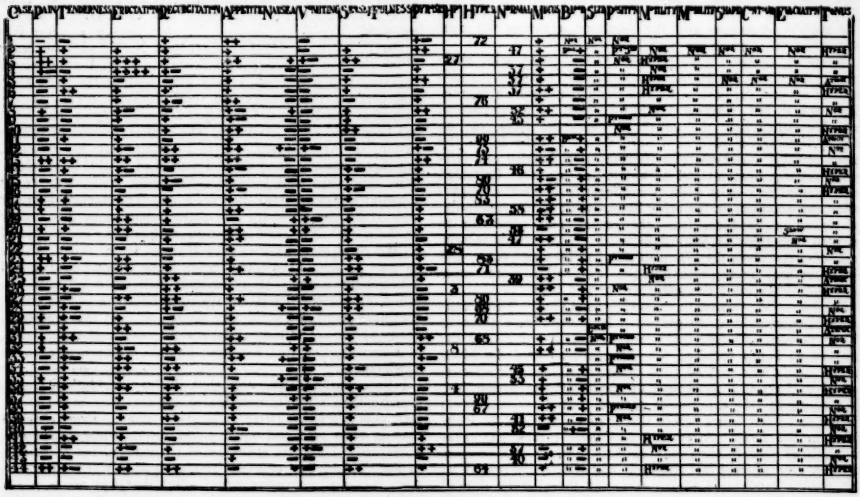
A study of the gastric condition in purely spastic constipation, if indeed there is such a condition, should cover a critical survey of many hundred cases in order that the deductions drawn may be of practical value. For this reason I offer, with full apology, my series of only forty-four cases, which have occurred in my practice during 1917.

Now, turning to a consideration of the objective symptoms, we find that hypertonia of the viscus was present in a large majority of the cases of this series.

STUDY OF THE GASTRIC CONDITIONS IN SPASTIC CONSTIPATION

		No.		No.
Pain	Present	15	Absent	29
Tenderness	Present	25	Absent	19
Eructation	Present	24	Absent	13
Regurgitation	Present	27	Absent	17
Vomiting	Present	10	Absent	34
Fulness	Present	32	Absent	12
Pyrosis	Present	24	Absent	20
Appetite	Present	39	Absent	5
Nausea	Present	13	Absent	31
Mucus	Excess	34	Normal	10
Benzidin	Positive	18	Negative	26
Size	Normal	42	Negative	2
Position	Normal	36	Negative	8
Motility	Normal	37	Hyper	7
Mobility	Normal	44		
Shape	Normal	44		
Tonus (hypo 2)	Hyper	26	Normal	16
Evacuation	Normal	43	Slow	1
Acidity (hypo 2)	Hyper	17	Normal	17

On fluoroscopic examination, twenty-six revealed spastic contraction of the stomach; whereas two were atonic and normal in this respect.



A study of the gastric conditions in spastic constipation.

Obviously it was proper to include only those cases in which a careful roentgen-ray study has been made. Furthermore, I have excluded those cases in which other pathologic conditions, such as chronic appendicitis, chronic cholecystitis or peptic ulcer, were found. In other words, I believe that all the cases reported are chronic spastic constipation.

Of this series twenty-four had pyrosis coming on before meals, while twenty-nine experienced no pyrosis. Twenty-seven complained of acid regurgitation from one-half to two hours after eating, and seventeen did not have it. In thirty-nine cases the appetite was normal or increased, and in five the appetite was absent. Ten of these patients complained of vomiting and thirteen of nausea.

The time of evacuation was normal in forty-three and retarded in one case. The stomach was normal in shape and mobility in all the forty-four cases under consideration; and all but two were of normal size; these two were dilated. In thirty-six cases the stomach was in the normal position, and eight cases showed more or less ptosis. In seven cases hypermotility was present, and in thirty-seven normal motility.

Studying the gastric secretions, we noted that seventeen cases showed moderate hyperacidity with hypersecretion, ten showed subacidity, and seventeen, normal values.

Abnormal amounts of mucus were recorded in thirty-four of the forty-four cases. This coincides with many observations in the past, that whenever we find the stomach the seat of spasmodic contractions, if continuing any length of time, we find a chronic con-

* Read before the Section on Gastro-Enterology and Proctology at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

gestion of the mucosa with an increased production of mucus. It is in this class of cases we get the bloody smear on the duodenal thread, which is so different from the characteristic short, definite stain, mostly confined to one side of the thread, found in peptic ulcer. To bear out, somewhat, my assertion in this regard, there was a positive benzidin reaction in eighteen of the forty-four cases, showing an engorged mucosa, which is easily disturbed by the stomach tube.

1624 I Street.

ABSTRACT OF DISCUSSION

Dr. I. H. Levy, Syracuse, N. Y.: It is rather unfortunate that the words physician and physic come from the same root. The laity expect the physician to dispense physic and the physician cannot entirely get away from this idea. Constipation may occur with any gastric condition, and, on the other hand, may produce almost any stomach symptom, and it is often difficult to decide which is cause and which effect. Constipation is frequently associated with those gastric conditions which result from the taking of insufficient food. These patients, owing to their stomach symptoms, eliminate one article of food after another until they eat so little that obstinate constipation results. The constipation aggravates the gastric symptoms and the resulting weakness the constipation. This produces a vicious circle.

There is another form of constipation found with these cases, described by Hertz as dyschezia. In our roentgen studies we find the barium reaches the ampulla within twenty-four hours, but remains there for days. The abdominal muscles either lack the power to expel the feces, or the tightly contracted sphincter retains them. I prefer to use the more recently suggested classification of rightsided and leftsided constipation, instead of atonic and spastic. Leftsided constipation may exist without causing any symptoms. Rightsided constipation, on the other hand, owing to the absorption of poisonous products from the cecum, may give rise to marked symptoms of autointoxication. In a certain percentage of these cases there is also an open ileocecal valve, and the feces may regurgitate into the ileum. The worst cases of autointoxication I encounter are of this type.

Dr. Louis M. Gompertz, New Haven, Conn.: Three capsules each containing 10 grains of lampblack were given to thirty persons at different times during the day and the number of hours required for the appearance of the black in the stools was noticed. All of these persons were accustomed to having a movement of the bowels each morning. The result of this experiment showed that it required from twelve to fifteen hours before the lamp black could be identified in the feces. After this was done I took 100 cases of habitual constipation, just running through my records, without any attempt at selection, and noted the results of the gastric analyses. Eighty-seven of these cases showed hyperacidity while the remaining ones showed a subacidity or a normal gastric content. It has been pointed out by Schmidt and Strassburger that hyperacidity is an important factor in chronic constipation. It was explained by them that the hyperacidity causes a very perfect absorption of the foodstuffs in the intestines by diminishing the number and retarding the growth of intestinal bacteria, and on account of this a very small residue is left, and then there exists the condition known as spastic constipation. Since this investigation was brought about I have paid particular attention to the gastric conditions in chronic constipation and I have observed that in cases of spastic constipation the symptoms almost always point to hyperacidity in the gastric contents. Whenever the contents are examined, hyperacidity is often present, and I believe it to be an important factor in predisposing a patient to chronic constipation.

Dr. Max Einhorn, New York: In cases of spastic constipation we must rely wholly on symptoms from the beginning, so we must know what we are talking about. Spastic constipation is a variety of constipation which is characterized by too infrequent evacuation of the bowels, and pains during the defecation. Occasionally these fecal masses come out containing mucus and sometimes even a trace of blood. In the ordinary form of chronic, atonic constipation we do not find these symptoms. There is never pain combined with defecation, never mucus, or rather exceptionally do patients complain of that, and never any blood.

Dr. Morgan said that in almost all of these cases he found a normal position of the abdominal organs; in only two, I believe he said, was there any abnormality to be found. In my own cases, as far as I could see, where spastic constipation was present (the definition of this term to be applied as I expressed it) it was principally associated with marked enteroptosis. Again, I have observed that in these conditions hyperchlorhydria is not as often found as in the ordinary forms of constipation.

It is one thing to say that in cases of constipation we find these conditions present and quite another thing to say that these gastric anomalies produce the constipation. I tried to show in a certain variety of conditions of the stomach, hyperchlorhydria and achylia, that constipation in such cases may be caused by anomalies of the stomach. In that way I believed we would leave the constipation as it was and not pay attention to it, but simply give the patient a remedy appropriate to correct the gastric anomaly, and see what happened. It was found that in some of these cases the constipation improved by itself, and that is the reason why I felt that constipation in those cases was caused by a gastric anomaly.

Dr. Dwight H. Murray, Syracuse, N. Y.: I have some ideas about constipation and doubtless when I am through speaking you may think I have gone back to the dark ages, and perhaps the notions are foolish. With regard to the causes of constipation, I feel that I must disagree with what has been said about etiology. The primary causes of constipation, so far as I am able to ascertain from my practice, are three, namely (and these I published in 1911): carelessness, ignorance and laziness. You may smile, but let us consider the child from the cradle up. The mother does not understand the necessity of regular attention to this matter by the child. The child grows up without any knowledge of it; the child would rather play than go to the toilet. When he goes to school, he often leaves home without having had a bowel movement. Many children will put it off until the bowel eliminates itself in the underclothing. This thing continues until the child has grown up, and the symptoms (causes) we are talking about are the results, in my opinion, of a constipation that has been brought on by ignorance or carelessness.

I have patients who say that the mother, father, aunts, grandmother, all were constipated and that they have hereditary constipation. There is no such thing. Every normal man is born free and equal so far as muscular activity is concerned. I am not speaking of obstipation, but of constipation. I find that in every single instance when I mention these things to my patients they admit that they are careless.

A business man, for example, on account of engagements in his office neglects his morning bowel movement. A frequent repetition of this brings on chronic constipation and autointoxication. Such patients cannot produce the normal gastric and intestinal juices, and cannot furnish proper nourishment for any of the tissues, and later we begin to have rectal trouble as a result of constipation. Perhaps there is an ulcer in the rectum and then the vicious circle begins; we have the rectal pathology keeping up the constipation and it keeps up the rectal trouble. I believe we must be consistent and differentiate between the results of constipation and its causes.

Dr. Charles D. Spivak, Denver: Dr. Morgan's chart appeals to me greatly. We have not given enough attention to the recording of symptoms. We are gradually coming to understand that all the laboratory methods are not of as great importance as taking down and noting the symptoms that the patients themselves tell us. It may sound unscientific, but we have to learn our lesson from the surgeons who have found that a good history taken from the lips of the patient throws more light on the case than the laboratory can ever expect to shed, and that the initial symptoms, especially,

are the things that give the most light. A simple question as to whether the pain came first and then the vomiting, or the vomiting first and then the pain, may change the diagnosis.

Something has been said with reference to the taking of food. The taking of less food is considered a factor in constipation. This is absolutely wrong. When we say "taking food" we mean food in quantities sufficient for that particular man or woman. What may be enough for me is not enough for some one else. I have found that the quantity of food has nothing to do with these cases; that is, that the taking of a large amount of food does not necessarily preclude constipation. I have seen people who eat a great deal and are constipated, and I have also seen women who are not eating enough and they are also constipated. Both are abnormal. People take more food than they should, and when the quantity of their food is reduced their constipation as a rule ceases. There surely must be a mechanism by which this superfluous quantity of food put daily into the stomach starts the inhibitory function of the bowels. As soon as the food is reduced to the normal the natural inclination of evacuating the bowels starts.

DR. NATHAN ROSEWATER, Cleveland: Dr. Morgan's instructive paper demonstrates that there is no uniform acidity whether movements are regular or not. In my paper on enteroptosis, in 1900, I cited cases of superacidity or subacidity resulting alike in cures following abdominal plaster bandaging, whereas only symptomatic relief followed treatment by neutralization, thus convincing me that many superacidities and subacidities resulted from enteroptosis. I have often observed constipation and head cold occur the next day after loss of sleep from a night call. Tracing these sequences to loss of sleep, resulting in insufficient peristalsis, I always avoid them by taking a laxative before going to bed. Insufficiently resting the nervous system tends toward peristaltic insufficiency; conversely, sufficient rest and sleep maintain the efficiency of the regulating mechanism.

With Dr. Spivak I must differ about humoring those who have no appetite for breakfast. Surely the stomach is empty; nervous muscular and glandular systems have rested much longer than for the other meals. These patients mostly awaken with "that tired feeling" of all their muscles, external and internal. Their muscles of mastication and deglutition, and also the stomach musculature *feel* tired. I insist they must and can eat a good breakfast.

DR. DAVID BERCINSKY, New Haven, Conn.: From what I have heard here this morning I have received the impression that it is not necessary to bring any special proof to bear out one's statements. I will therefore say a few words in reference to the opinion of the previous speaker that constipation is a result of ignorance and negligence and that the speaker was surprised when he heard patients say that constipation was hereditary in their families. I do believe that there is a form of constipation which is entirely dependent on heredity; that it is not always ignorance or lack of care behind it. At least, I have had cases which convinced me of this.

Now, if we do inherit anatomy, why is it not possible that we may inherit abnormal physiology just as well as normal physiology. Inasmuch as constipation or normal evacuation of the bowels depends on the nervous rhythm of the intestinal peristalsis, this peristaltic rhythm may be individual and characteristic in certain families as a hereditary trait.

DR. WILLIAM G. MORGAN, Washington, D. C.: I did not consider or think I had the right to consider the etiology and treatment in this paper. If I had not unwittingly further contracted the scope and limit of this paper by confining it to spastic constipation, and had considered the gastric conditions in chronic constipation, the small diagram shown would probably have been quite different; and, as one of the gentlemen who discussed the paper pointed out, hyperacidity would have stood well at the head, and as Dr. Einhorn also pointed out, visceroptosis would probably have had a prominent position.

I agree with Dr. Murphy on the three causes for simple constipation. I think that is borne out by any one who takes the trouble to investigate the previous habits in these conditions, and it is in this type that the Christian Scientists claim to cure and do cure, and it is this one disease more than any other which brings to them such an enormous following, and in which they assert the patients often have been to fifty good practitioners but still have their constipation unrelieved. Dr. Einhorn a great many years ago pointed out the best treatment in this class of cases when he said: "Do not think so much of your bowels. It does not make much difference if they do not move for two of three days." Don't let your patients think that their constipation, or chronic constipation, is a thing of serious import. A little regulation of diet, and a total absence of medicine and enemas, and allaying the fear of enlarged joints, or brain disease, or epilepsy, or old age as a result, and a large percentage of these patients will get well of their constipation and will be almost as grateful to you as they are to Christian Scientists.

THE RECTANGULAR FLAP INCISION FOR OPERATIONS WITHIN THE UPPER ABDOMEN*

WILLY MEYER, M.D.
Attending Surgeon, German and Postgraduate Hospitals
NEW YORK

The last decades have witnessed an increasing tendency of operative surgery to emancipation from the time-honored rule of placing the skin incision parallel to the longitudinal axis of the body.

Trendelenburg's transverse incision for operations within the bladder (1882) was one of the forerunners in this direction.[1] Later followed Pfannenstiel's[2] suprasymphyseal transverse incision of skin and fascia with median division of the deeper tissues for operations on the uterus and its adnexa (1898). In 1910, Sprengel[3] of Brunswick demonstrated the advantages of the transverse direction of the incision in abdominal operations. He emphasized that the broad aponeurotic expansions of the three flat abdominal muscles which join and interlace with those of the opposite side in the median line, forming the linea alba, represent the tendinous termination of these muscles. If the latter contract, the many fine, little, tendonlike fascicles and fibers of these aponeuroses are put on the stretch and pressed together. Consequently, a transverse abdominal incision, which divides the aponeuroses in the direction of their fibers, had the physiologic tendency to *approach* the wound borders, while a cut perpendicular to the direction of their fibers, that is, a vertical cut in the direction of the longitudinal body axis, had the physiologic tendency to make the wound borders *gape*. However carefully stitched up, the tendency of the borders of a longitudinal wound during healing, particularly at times of sneezing or coughing, was to separate. Hence the observation, occasionally made, of a reopening of such a longitudinal abdominal incision, if the catgut used for layer sutures had become absorbed or burst, or retaining silkworm-gut sutures of skin and fascia have been removed too early. Hence, also, the placing of fascia retention sutures in the shape of the figure of 8 and otherwise, left in place for two weeks.

Within the last few years more interest has turned to this question also on this side of the Atlantic. A number of articles have appeared dwelling on this

* Read before the Section on Surgery, General and Abdominal, at the Sixty-Eighth Annual Session of the American Medical Association, New York, June, 1917.

1. Meyer, Willy: Arch. f. klin. Chir. (Langenbeck's), 1885, **31**, 494.
2. Pfannenstiel, Joachim: Klin. Vortr. (Volkmann's), 1900, N. F., No. 268.
3. Sprengel, Otto: Arch. f. klin. Chir. (Langenbeck's), 1910, **92**, 536.

subject; Farr,[4] Moschcowitz,[5] and Meyer[6] have called attention to the decided advantage of the transverse incision. On suturing the wound with catgut in layers, a reopening will hardly ever occur.

Furthermore, even in the event of suppuration following contamination of a transverse wound of the abdominal parietes, it will be seen that the deepest

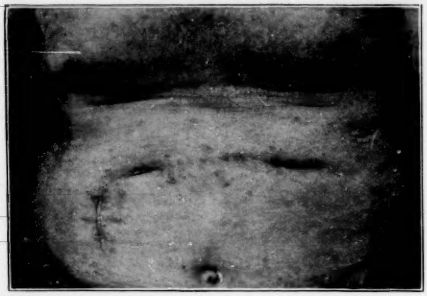


Fig. 1.—Rectangular flap incision with a downward sweep of the right half of the cut within and parallel with the fibers of the right rectus muscle. Case of suspected duodenal ulcer. Appendix only found diseased and adherent in the pelvis.

continuous suture line embracing peritoneum plus transverse fascia and posterior sheath of the rectus muscle will hold. The abdominal cavity remains safely closed. Only in one instance have I seen an exception, and that was in a patient who, after an operation on his stomach, developed what seemed to be a typical tetanus, in all probability due to catgut infection. Here, with the boardlike hardening of the abdominal wall, the entire wound, inclusive of the peritoneum, reopened; reclosure with strong silk sutures, through-and-through, proved a difficult task.

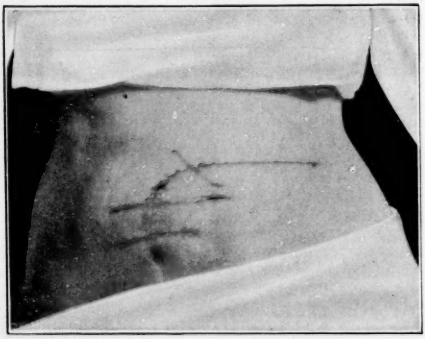


Fig. 2.—Same incision as described in Figure 1, used in a case of sarcoma of the cecum with abdominal and retroperitoneal metastases above and below the umbilical line.

Necrosis of the fascia, not infrequently seen after the perrectal incision, in the case of infection within the abdomen, occurs rarely when the transverse incision is used.

However, a surgeon, making use of the transverse abdominal incision in his daily routine work, cannot help noticing a number of drawbacks or rather defects of this incision. For instance, if the cecal region needs exploration and the patient has a long stretched abdomen, it will often not be easy to pull the parts up into the transverse wound above the umbilicus. Here a turn downward of the right extremity of the incision *within* the rectus muscle, with the possibility of lengthening this part of the incision downward to any desired extent, has proved a good combination in my hands. (Figs. 1 and 2.) For this reason, it is wise not to divide completely the right rectus muscle in the transverse direction. One can then always add the turn and downward sweep, should this indication become apparent in the course of the operation. This rectangular flap incision, with the short leg running downward, has given excellent results in three different cases. It can, of course, be employed equally effectively to the left of the median line, as I had occasion to observe.

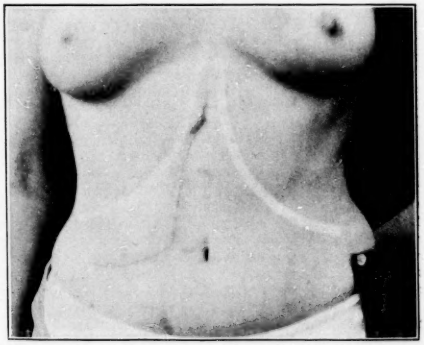


Fig. 3.—Steeply rising borders of the costal arches; they are marked with strips of adhesive plaster.

Further, when employing the transverse abdominal incision for work in the upper abdomen, particularly in gallbladder surgery, the surgeon will notice off and on that the exposure is unsatisfactory. The cause usually is a steep incline of the costal arches (Fig. 3). An additional incision in the median line down to, but not including the peritoneum, will then have to be added to make the upper border of the wound yield; or a horseshoe incision with straight shanks which divides the recti muscles obliquely instead of horizontally (Fig. 4) must be made from the start. It will also be seen, when using the transverse incision in gallbladder surgery, that not infrequently the liver border cannot be turned up well, the step so helpful in some operations of this type.

I have, therefore, particularly since 1915, more frequently made use of the rectangular flap incision also for operations within the upper abdomen, more specifically for operations within the upper right abdomen, namely, explorations of and operations on the gallbladder and bile system. Thus far, only one case has presented itself in which the indication for employing the incision on the left side of the median line could be found.

4. Farr, R. E.: Journal-Lancet, November, 1912; Am. Jour. Surg., September, 1915.
5. Moschcowitz, A. V.: Tr. New York Surg. Soc., Ann. Surg., 1915, p. 495; Am. Surg. Assn., 1916, p. 213.
6. Meyer, Willy: Ann. Surg., November, 1915.

It is on the basis of this experience that I wish to make a few brief remarks.

There are two different types of this approach: In the one, *all* the layers of the abdominal wall are divided through the same line of incision. In other words, all the tissues that make up the abdominal wall, inclusive of the posterior rectus sheath, transversalis fascia and peritoneum, are turned up in the shape of a rectangular flap (Fig. 5). It is self-evident that thereby the innervation of the abdominal muscles is not interfered with, as only fascias are cut and the muscle substance is divided transversely in the direction of the course of the nerves.

This is the method proposed by Koenig[7] and Kehr.[8]

In the other type of incision only a rectangular *skin-muscle* flap is raised, which includes skin and subcutaneous fat plus the anterior sheath of the rectus muscle and a portion of its belly in the line of the skin incision, while the transversalis muscle and transversalis fascia with the posterior sheath of the rectus muscle—which is made up in this portion of the abdomen, in part at least, by the united aponeuroses of the transversalis muscle and posterior lamella of the aponeurosis of the oblique—plus peritoneum are incised in the oblique direction parallel and in front of the costal arch (Wechselschnitt). The intercostal nerves which feed the muscle substance of the rectus are always clearly exposed and here, too, absolutely preserved. (Fig. 6.) This is the method proposed by Perthes.[9]

1. *Koenig-Kehr Incision.*—When forming the typical rectangular flap by the Koenig-Kehr incision, the surgeon can most advantageously start the incision within or next to the median line (right or left), close to the xiphoid process, and then divide all the tissues of the abdominal wall nearly down to the level of the umbilicus. From this place, when the rectangular turn is rounded off, the skin with subcutaneous fat is divided in a horizontal direction to about the anterior axillary line. Before the outer part of the rectus

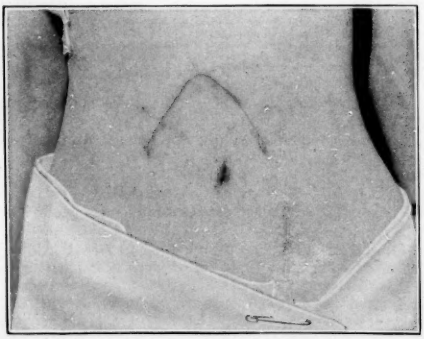


Fig. 4.—Horseshoe incision. Both recti muscles were divided obliquely, parallel with the steep costal arches in a case of gastro-enterostomy with pyloric exclusion for duodenal ulcer.

muscle is divided, its substance can be first fastened to the anterior rectus sheath by the two rows of catgut sutures as employed in the typical transverse incision by Perthes (Fig. 7); the muscle is then divided between them (Fig. 8). If the surgeon prefers, these sutures can be omitted. Then the posterior sheath of the rectus with the peritoneum are divided in the same transverse line.

The access obtained by this incision is an excellent one. Should intra-abdominal conditions require the

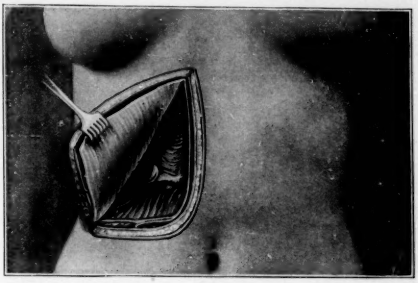


Fig. 5.—Koenig-Kehr incision. All the tissues that make up the abdominal wall are divided in a rectangular line. Sharp retractor pulls on the parietal peritoneum.

insertion of drains, these are made to emerge at either the upper or the lower angle, as may be deemed best in the individual case. The suture of the wound is somewhat difficult, but entirely feasible.

2. *Perthes' Incision.*[10]—There is the same arrangement of the rectangular skin incision (Fig. 9), and of the longitudinal part of the cut as in Type 1 (Koenig-Kehr incision), but only down to, not through the posterior sheath of the rectus and peritoneum.[11] This part of the incision requires some care. In women who have gone through a number of pregnancies, the posterior surface of the rectus muscle often forms a firm unit with the thin aponeurotic structures and the peritoneum, all blended into one, rather atrophic, layer. Before the surgeon is aware of it, the peritoneal cavity is opened in the longitudinal, oftener in the transverse part of the incision, or in both, an irritating occurrence, since the hole has to be stitched up, and sometimes it will render impossible the intended division of the deeper layers in an oblique direction.[12] To avoid this accident it is advisable not to start *too* close to the median line and to divide the muscle fibers bluntly, with the handle of the knife. At the lower end of the longitudinal muscle division, just above the umbilicus, the second finger — better the second and third fingers — of the operator's pronated left hand are gently pushed between the muscle substance and its posterior sheath, until a resistance is felt at the outer turn of the rectus sheath (Fig. 10). With the two fingers in position, the two horizontal rows of surrounding catgut sutures are put in place (Fig. 10), the operator's fingers protecting the peritoneal cavity from

7. Koenig, Fritz: Centralbl. f. Chir., 1912, No. 16, p. 529.
8. Kehr, Hans: Arch. f. klin. Chir., **97**, 74.
9. Perthes, G.: Zentralbl. f. Chir., 1912, No. 37, p. 1252.

10. During the reading of the paper, the various steps of the operation were discussed with a motion picture.

11. If the costal arches rise steeply, the incision begins close to the xiphoid process and runs at first parallel with the costal arch. As soon as the place about 0.75 to 1 cm. distant from the median line has been reached, the knife turns downward as shown in Figure 9 (see Fig. 3). This additional incision upward can also be made in the course of the operation, should conditions require more room to do the work.

12. In two patients, one, a very fat man, and the other, a woman who had passed through many pregnancies, I found a ventral hernia, the posterior rectus sheath presenting quite a tear. With some care, this fascial hole could be nicely closed by means of a continuous suture, and then the operation continued.

being injured by the needle. The sutures are tied by the assistant, rather tightly. Between them the muscle is cut through (Fig. 11). Usually there is no bleeding at all, thanks to the efficient work of the transverse retention sutures, which not only prevent the retraction of the rectus fibers, but act as a prophylactic hemostatic. For that purpose, the assistant on tying these sutures has to pull on them firmly before knotting. Should the epigastric artery still bleed, it is wise in every instance first to secure and tie the few remaining bleeding points, which is best accomplished with a clamp with a rounded tip (von Bergmann's). Now a sharp retractor raises the skin muscle flap, while, with a gauze mop, the operator separates the muscle from the underlying aponeurotic structures toward the costal arch. Soon the two intercostal nerves with their concomitant blood vessels come into view. About one third inch (1 cm.) in front of these and parallel with the costal arch, the abdominal cavity is incised (Fig. 6).

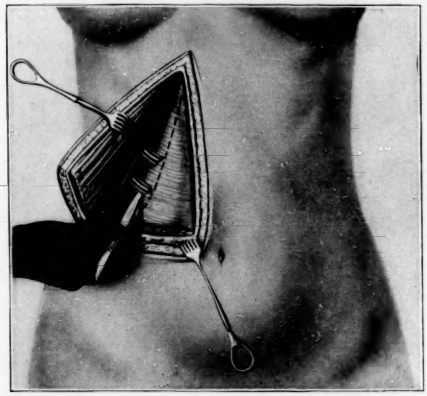


Fig. 6.—First step of Perthes' incision. Rectangular skin muscle flap raised, and costal arch exposed. Two intercostal nerves with their concomitant blood vessels that feed the rectus muscle are clearly in view. Right in front of their exit from the posterior sheath of the rectus, an oblique incision is made parallel with the costal arch.

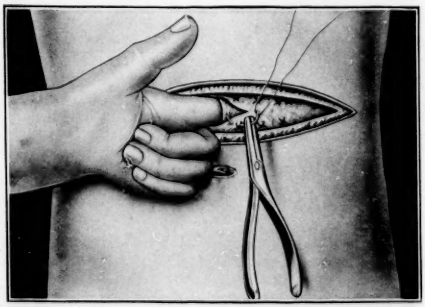


Fig. 7.—Transverse abdominal incision. Left forefinger introduced through a peritoneal buttonhole and three catgut sutures placed above and below with a round curved needle in a horizontal line about 1 cm. apart.

Advantages.—The principal advantages of this abdominal incision are:

(*a*) Wide access is gained to the upper abdominal cavity, much better than by the longitudinal or transverse incision (Fig. 12).

(*b*) There is the same preservation of the muscle innervation as in Type 1, a factor which gains in importance in strong muscular male patients.

(*c*) The incision through the posterior sheath of the rectus and the peritoneum, down to its lower angle, is nowhere in the same line with the skin incision. It is situated on a higher level and runs in a different direction than the transverse cut dividing the anterior sheath of the rectus and the muscle, a point which greatly adds to the firmness of the resulting abdominal scar, and thereby guards against the occurrence of a ventral hernia, even in suppurative cases.

(*d*) The oblique cut through the transverse fascia and peritoneum usually meets the very border of the liver, or, in cases of ptosis, its convexity, same as the Courvoisier incision, which practically runs in the same direction as the oblique cut in the Perthes incision; however, it divides *all* the layers of the abdominal wall in one and the same line, including the nerves. The liver can be turned upward or pulled out in front of the abdominal wall, as the case may require and the fixation of the liver will permit (Fig. 12).

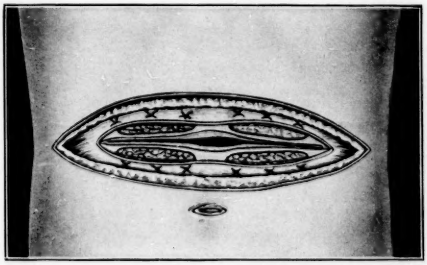


Fig. 8.—Division of the rectus muscle. Both muscles are severed in the transverse abdominal incision, between the two rows of transversely placed catgut sutures which fasten the muscle substance to the anterior rectus sheath and act at the same time as efficient hemostatics for the divided epigastric artery and its branches.

(*e*) The small intestines do not crowd into the wound; usually only the omentum and the colon (hepatic flexure), or the omentum, the colon and the pyloric end of the stomach with the duodenum come into view. The small intestines remain protected; less packing is required.

(*f*) On the left side of the median line, the additional cuts made through the seventh costal cartilage near the sternum and from the seventh to the tenth individual rib cartilages near their junction with the bony substance, as needed for the osteoplastic raising of the costal arch (Marwedel) in stomach operations near the cardia, are rendered easier than in Type 1. The costal arch is to be approached in this osteoplastic operation *underneath* the belly of the rectus muscle and *above* the transverse fascia. Here it can be easily and thoroughly exposed (Fig. 13).

Through this abdominal wound, made on the right side, a careful inspection and palpation of the entire length of the stomach, pylorus, duodenum, liver and gallbladder and pancreas are, of course, possible; that

is to say, all the organs of the upper abdomen which usually interest the surgeon. Any other desired palpation within the abdomen can also be carried out. In the great majority of the cases, also in patients with steep costal arches, the appendix can be nicely reached and removed, and additional operations on the stomach, for example, gastro-enterostomy, pyloric resection, etc., can be done at the same time.

Should still more room be needed, the horizontal part of the skin wound is somewhat lengthened outwardly, and the three abdominal muscles bluntly separated in the direction of their fibers, as in McBurney's intermuscular incision for appendicitis. If this intermuscular wound is properly held apart, the opening in the posterior sheath of the rectus muscle and peritoneum can be materially increased. I should also think, although I have so far never tried it, that in case of necessity there is no objection to lengthening the longitudinal part of the incision downward, or carrying the horizontal part of it across the median line to the opposite side (Fig. 14), although it seems to me that such a procedure would not be particularly good surgery.

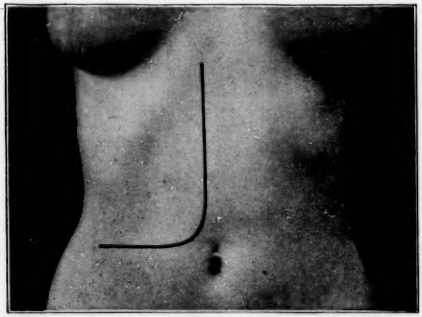


Fig. 9.—Perthes' incision. Line of skin division.

The contents of the small pelvis can, of course, be thoroughly palpated through this incision, but operations on its organs will require a separate incision.

CLOSURE OF THE WOUND AND AFTER-TREATMENT

In closing up, it seems best to bring out the material used for drainage at the upper angle of the wound (Fig. 15). If the hepatic or common duct needs drainage, the normal downward direction of the bile current will induce the operator to make the exit for the drainage tube at the lower (outer) angle.

The suture of the oblique wound of the posterior sheath of the rectus and peritoneum—which tissues are frequently rather thin—to secure best results should commence at the angle which does not harbor the drainage. When this continuous, not interlocking, catgut suture is placed, the patient who, during the intra-abdominal work, has usually been but lightly under the anesthetic, should again be more deeply narcotized up to complete relaxation, and then the upper part of the body raised either by a sandbag or by means of an arrangement of the operating table. If the patient strains, these tissues may tear, although they are strong and resistant, and yield excellent material for safe and reliable union. Should this happen, the tear will nevertheless usually run from the oblique wound in a transverse direction toward the median line, and can be well closed by a few interrupted stitches, after the longitudinal cut has been closed up to the tear, the operator having started the suture from both ends (Fig. 16).

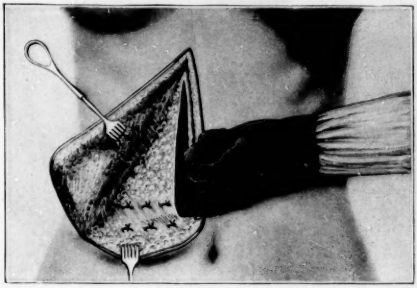


Fig. 10.—Rectus muscle divided bluntly near the median line and in the direction with its fibers. Near the umbilicus, two fingers of the operator's pronated left hand are gently pushed between the substance of the rectus muscle and posterior sheath. Double row of catgut sutures in place, about 1 cm. apart, each completely embracing and compressing a portion of the muscle.

In my last cases, I have sutured the oblique wound in front of the costal arch from above downward, irrespective of the drain exit, because the material to be stitched is more voluminous above than below (transversalis *muscle*, plus fascia and peritoneum), and thus less liable to tear, even if the patient should strain. By close attention, irregularity of the two sides and injury to the abdominal contents in closing the outer angle of the wound can be avoided.

The abdominal cavity having thus been closed, two rubber tissue cigaret drains are placed on top of the transverse fascia—a step of importance because this space must be drained. They emerge at the lower angle of the wound (Fig. 15). Then, the anterior rectus sheath is stitched up (Fig. 15). A clamp, originally placed at the curve of the wound in the anterior sheath of the rectus, will prove of great help

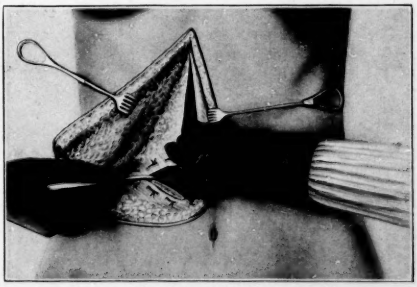


Fig. 11.—Muscle being cut through transversely between the two rows of transverse sutures.

in suturing this fascia neatly. One interrupted stitch is first placed at this spot with its ends left long.

In the longitudinal part of the fascial wound it is sufficient for the needle to catch the wound border internally with some additional muscle tissue exter-

nally. When the single suture at the curve is reached, the longitudinal suture is knotted with one of its ends. Another continuous suture is then started.

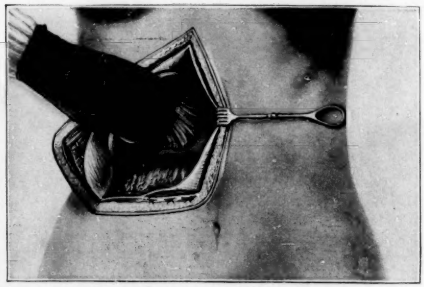


Fig. 12.—Second (oblique) incision finished. Wide access to the liver, gallbladder and bile-ducts and other parts of upper abdomen.

In the transverse portion of the incision, needle and thread take the transversely placed two rows of fascia-muscle sutures in their grasp (Fig. 15). The skin flap is secured by a few silkworm-gut sutures, and the wound is closed by means of a running suture of fine catgut or silk (Fig. 17). After the patient has reached the bed he is placed in a pronounced right-sided Syms' position for the first twenty-four to thirty hours. This position favors drainage and the rapid attachment of the skin-muscle flap to the deeper layers. I have been using this posture for many years in all cases of cholecystectomy, drainage of the bile ducts, perforative appendicitis, etc., requiring drainage, to my greatest satisfaction and benefit to the patient.

PERSONAL EXPERIENCE

Thus far I have made use of the two types of rectangular incision in a rather limited number of cases.

The through-and-through cut (Koenig-Kehr) I have tried but three times; once, a number of years ago in a case of cholecystectomy; the second time, in a patient with suspected duodenal ulcer, when an unintended division of the peritoneum, in the line of the transverse cut, frustrated the contemplated Perthes incision, in which case only a diseased appendix was found and removed; the third time, in a case of cholecystectomy in a multipara, in whom, when the muscle was being bluntly separated from its posterior sheath, the abdominal cavity was unintentionally opened in the perpendicular as well as the horizontal part of the incision.

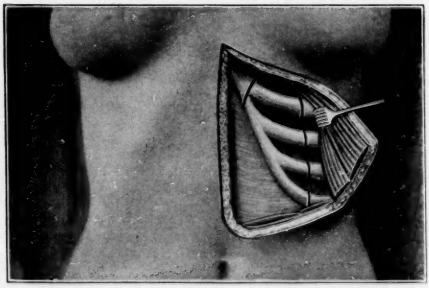


Fig. 13.—Easy approach in Perthes' incision to the left costal arch for making the division of rib cartilages for the osteoplastic lifting of the arch in operations at or near the cardia (diagrammatic).

The typical Perthes incision which was designed for operations on gallbladder and bile ducts has been tried by me in twenty-one patients,[13] in the majority of whom cholecystectomy was done; in one case, additional choledocholithotomy, with subsequent hepaticus drainage, had to be carried out; in two instances, it was employed as a useful entrance for exploration with added appendectomy; once, a subhepatic abscess consecutive to a duodenal ulcer was found.

Perthes himself, at the time of his publication, had tried it in sixteen patients; he praises its advantages.

The number of patients thus far operated on is not large. Still, the number has been sufficient to convince me of the real value of the rectangular flap incision. The Perthes incision, in particular, with the excellent access it affords and the easy closure of the wound, represents a valuable addition to our resources. The strong muscles of an athlete can be thoroughly preserved by it. Not the slightest weakness of the abdominal wall results. There is less tendency to hernia, even in suppurative cases.[14]

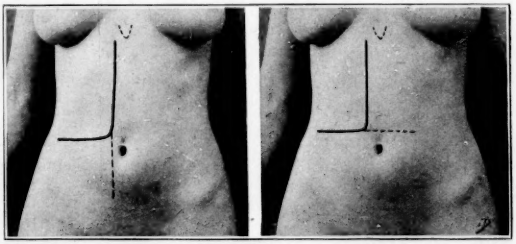


Fig. 14.—Lengthening one leg in the rectangular incision beyond the curve, either way, in case of emergency. (Method not tried; questionable surgery).

In view of the possibility of thorough inspection and wide access to all organs within the upper abdomen, and also our ability usually to remove the appendix easily through Perthes' incision, it seems to me the better policy in many cases of exploration to reverse the usual advance, that is, to cut down oftener on the gallbladder through this incision, palpate *and inspect* systematically the respective organs, and remove the appendix from this wound, rather than proceed in the opposite direction. The palpating hand pushed up through an appendicular incision can,

13. Since this paper was read, one additional operation has been carried out, making in all 22 cases in which the Perthes incision was employed.

14. In one patient, in whom cholecystitis was suspected in addition to a duodenal ulcer, a subhepatic abscess (streptococcus infection) was encountered. The gallbladder rested on the posterior parietal peritoneum and did not require removal. Here the space beneath the skin-muscle flap was temporarily drained with gauze tamponade and several rubber tubes. Although in the course of the following purulent discharge from this wound, the transversely sutured portion of anterior rectus fascia with muscle substance became necrosed and was pushed off in the shape of a sequestrum, an abdominal hernia did not follow. This observation is in agreeable contrast to the experience which occurs now and then, that necrosis of the anterior rectus fascia with some muscle substance, following the perrectal longitudinal incision for infected intra-abdominal troubles, induces the formation of a ventral hernia.

of course, *feel gallstones,* but it cannot detect, as the operator can by direct visual examination through the rectangular incision, distended bile ducts, adhesions of gallbladder and ducts with neighboring organs, or view the actual condition of duodenum, pylorus, etc.

In other words, by employing the appendix incision the surgeon can only palpate the condition of the organs of the upper abdomen; whereas in the rectangular Perthes incision he can palpate *and inspect,* insuring at the same time a perfect reconstruction of the abdominal wall.

Of course, the rectangular flap incision has not lately been exclusively made use of by me for all operations within the upper abdomen. Quite often the usual longitudinal perrectal approach was selected on either side of the median line, particularly in the female sex and in cases of acute infection demanding quick and immediate interference. Still oftener the typical transverse incision was favored. However, the more I have seen of the advantages of the Perthes incision, the more I feel inclined to try and let exploratory incisions and selected stomach affections also be benefited by it. It will be seen that work near the cardia especially can be made easier by this incision, inasmuch as the osteoplastic resection of the costal

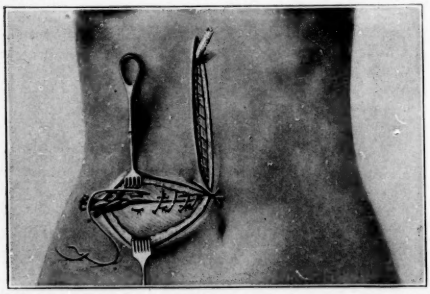


Fig. 15.—Rectangular incision being closed. Rubber tissue drain in bed of gallbladder, covered by the two sutured peritoneal flaps retained from the same, emerges at the upper angle of the wound. (A cigaret drain reaching down close to the ligated cystic duct is added in every case.) Longitudinal part of incision is closed, the transverse one in process of suturing. The thread embraces the transverse sutures. The fixating suture of the angle has been indicated by the artist. It should catch the fascia, not the skin as shown in the illustration, and the skin muscle flap should still be reflected. When suturing the skin, this corner stitch will be found of the same benefit as when closing fascia.

arch, as mentioned in the foregoing, appears to be a logical addition.

Nevertheless, let us remember that these rectangular flap incisions are only an addition to our operative resources. No one incision represents a panacea. We must adapt the incision to the individual case, and not the case to the incision.

The surgeon will act wisely if he becomes thoroughly acquainted with all types of abdominal incisions that have been found to be of value and present advantages for certain conditions.

700 Madison Avenue.

ABSTRACT OF DISCUSSION

DR. ROBERT E. FARR, Minneapolis: For the past six years I have not made a vertical incision above the navel. Two or three points I wish to take up in particular:

1. In relation to the retraction of the rectus muscle after incision is made, there is no reason for putting in the sutures except for the purpose of hemostasis. Measurements made in 150 of my cases show an average of 1 cm. of muscle projecting past the fascia, without a single exception. If this muscle does not project from above, it will project from

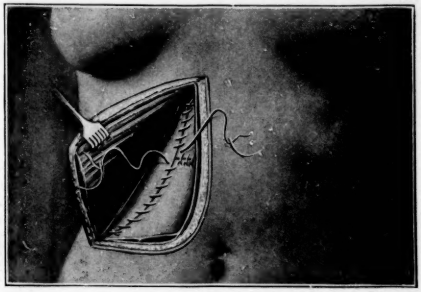


Fig. 16.—Transverse tear in the upper half of the oblique incision. It can be nicely repaired by first closing the main incision, suturing from either end with two needles toward the tear.

below; our measurements have shown no variation in this respect. A coaptation of the posterior and the anterior fascia always brings the red meat together.

2. Unquestionably there is more hemorrhage in these cases than when vertical incision is made, but to my mind this is an indication that they will heal better, just as there is better healing in the tissues of the face because of their great vascularity.

3. The researches of Quain of Bismarck, N. D., at the University of Minnesota, showed that when the pararectus incision was made, cutting off one, two or three of the thoracic nerves, abdominal adhesions resulted between the visceral and parietal peritoneum. In the control cases, in which the nerve supply was conserved, no such adhesions were found. This seems to me to be a very important piece of research.

4. In the matter of drainage I differ from Dr. Meyer in that I place the drainage well back, far to the right. To bring out the drain where Dr. Meyer does, the incision must be made further to the left. I like the transverse incision which extends a little past the midline and is then joined by a vertical incision. In two of my cases, in which both the vertical and transverse incisions were made, hernia occurred in the vertical, while the transverse held. Sprengel, also, has reported two such cases.

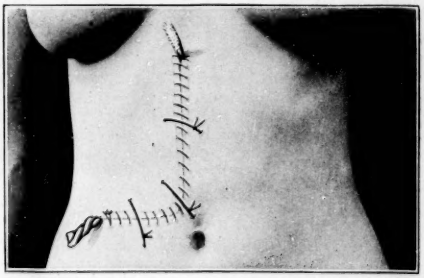


Fig. 17.—Silkworm-gut is used for retention of corner of the skin flap. The same is placed in the middle of the long and short leg of the cut.

DR. FRED B. LUND, Boston: I have been trying the transverse incision and have found that one cannot get the liver out so well as with the oblique incision. It is so easy to sew

up the transverse incision that at first you think you will not do anything else as long as you live. The long oblique incision, however, brings out the liver better. A combination of the two comes nearest to the ideal in a certain number of cases.

Dr. Willy Meyer, New York: I consider this rectangular flap incision to be entirely different from the transverse incision. In gallbladder surgery in particular I would prefer the rectangular flap incision. The retention sutures through fascia and muscle I consider an advantage. This incision can just as well be used in the left side. Particularly in operations near the cardia one will find it giving splendid access. I have employed it so far in one case only and could well work close to the cardia. Access can be further improved by an osteoplastic operation on the costal

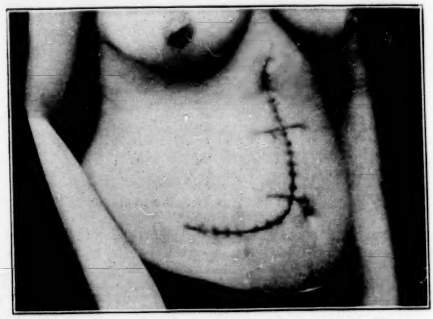


Fig. 18.—Final result. The short transverse scars mark the place of the two upper silkworm-gut skin sutures which had grasped the anterior sheath of the rectus muscle and were left in place for ten days. Securing the fascia in this manner usually is unnecessary, because the two cuts that make up Perthes' incision run at different levels and in different directions, the skin-muscle flap covering like a cap the entrance into the peritoneal cavity.

arch. Of course we will not adhere to any one incision, neither the transverse, nor the longitudinal, nor to the rectangular flap; I think we should practice them all.

INTRAVENOUS FOREIGN PROTEIN IN THE TREATMENT OF PSORIASIS*

FRANCIS J. SCULLY, M.D.
Research Fellow, Cook County Hospital
CHICAGO

In the treatment of chronic skin diseases which often resist the usual therapeutic measures, any new method of therapy that causes a more rapid and effectual disappearance of the lesions is worthy of investigation. This is particularly true of psoriasis, which is widely prevalent, and many times resists our best efforts to clear up the lesions. On account of its obscure etiology most forms of treatment have been used empirically, which probably accounts for the great variety and diversity of the methods employed.

Chrysarobin, first used by Keith in 1877, is probably the best known remedy, but possesses many disadvantages and does not always relieve the chronic cases. In treating these obstinate cases, strong preparations of chrysarobin have been used; but on account of the dermatitis produced, they could not be applied for long periods of time, necessitating an interrupted and long drawn out course of treatment. Chrysarobin also has the disadvantage of staining the clothing, linen and skin with which it comes in contact. Therefore, any method which will obviate or shorten its use will be of particular value.

Since the exact action of chrysarobin is not understood, it has been difficult to determine what measures will augment its curative effect. The research of Schamberg, Ringer, Raiziss and Kolmer[1] has shown that it has a marked affinity for the proteins of the lesions, especially the scales, but apparently has no germicidal activity. In connection with this study, they also noted that there is a nitrogen retention in psoriasis; however, a restricted protein diet has been tried with only limited success.

In the last four years, intravenous injections of autogenous serum have been employed. At first, this was advocated by Gottheil and Satenstein[2], Fox[3] and Hilario[4] as being a very reliable and efficacious method in the obstinate and resistant cases, though later reports by Fox,[5] and Trimble and Rothwell[6] indicate that it is successful only as an adjunct to former methods of treatment. Along the same line, Perry[7] has used subcutaneous injections of horse serum with about equal success.

Recently Engman and McGarry[8] used intravenous injections of typhoid vaccine with favorable results. They recommended it for further trial, and it was decided to investigate this form of foreign protein therapy in the dermatologic wards of the Cook County Hospital.

TREATMENT BY INTRAVENOUS INJECTIONS OF FOREIGN PROTEIN

Eight cases of chronic psoriasis were selected which were resistant, or were responding slowly, to other therapeutic measures. Previous to the use of the vaccine three patients had been using applications of chrysarobin, one ichthyol, and another arsenic internally, each one without marked improvement. These patients all had generalized lesions of the guttate or nummular types, and in four patients the face and scalp were also involved. The duration of the present attack varied from one to seventeen months. All the patients had had previous attacks, which in four cases had entirely cleared up under treatment, while in the others the condition had subsided somewhat, with lesions remaining up to the beginning of the present attack. These patients remained in the hospital during the entire course of treatment. In the mild cases occurring in dispensary patients, this treatment was not employed, as it was not considered advisable to use the vaccine in patients who would not be under observation during the reaction following the injection.

* From the Department of Dermatology, Cook County Hospital.

1. Schamberg, J. F.; Ringer, A. I.; Raiziss, G. W., and Kolmer, J. A.: Summary of Research Studies in Psoriasis, The Journal A. M. A., Aug. 29, 1914, p. 729; Research Studies in Psoriasis, Jour. Cutan. Dis., 1913, **31**, 698, 802. Schamberg, J. F.; Kolmer, J. A., and Raiziss, G. W.: Germicidal Activity of Chrysarobin, ibid., 1915, **33**, 1; Biochemical Properties of Chrysarobin, ibid., 1915, **33**, 98.
2. Gottheil, W. S., and Satenstein, D. L.: Autoserum Injections in Certain Obstinate Dermatoses, Med. Rec., New York, 1914, **75**, 620; The Autoserum Treatment in Dermatology, The Journal A. M. A., Oct. 3, 1914, p. 1190.
3. Fox, Howard: Autogenous Serum in Treatment of Psoriasis, The Journal A. M. A., Dec. 19, 1914, p. 2190.
4. Hilario, J.: A Contribution to the Autoserotherapy of Certain Diseases of the Skin, Jour. Cutan. Dis., 1914, **32**, 780.
5. Fox, Howard: Human Serum and Blood in the Treatment of Psoriasis and Other Skin Diseases, Jour. Cutan. Dis., 1915, **33**, 616.
6. Trimble, W. B., and Rothwell, J. J.: Treatment of Psoriasis with Autogenous Serum, Jour. Cutan. Dis., 1915, **33**, 621.
7. Perry, A. P.: The Treatment of Psoriasis with Horse Serum, Boston Med. and Surg. Jour., 1916, **174**, 274.
8. Engman, M. F., and McGarry, R. A.: The Treatment of Certain Diseases of the Skin by the Intravenous Injection of a Foreign Protein, The Journal A. M. A., Dec. 9, 1916, p. 1741.

The foreign protein employed in these cases was typhoid vaccine prepared from an active culture, grown twenty-four hours on agar slants, washed off with saline solution, killed by heating at 70 C. for two hours, and preserved by the addition of 0.5 per cent. phenol (carbolic acid). It was diluted so that each cubic centimeter contained 100,000,000.

From three to five injections were given at intervals of from three to four days. The average dose was from 75,000,000 to 100,000,000, the same dose being used for the succeeding injections as for the initial injection. Following the third injection, 2 per cent. chrysarobin ointment was applied daily to the lesions on the body, and 5 per cent. ammoniated mercury ointment to the face and scalp. No internal medication was given.

The reaction following the vaccine was similar to that observed in acute articular rheumatism,[9] except that the rise of temperature and the leukocytosis were not so marked. The succeeding injections were followed by a less marked reaction than the preceding injection. The maximum rise of temperature was to 103 F., and the maximum leukocytosis was 17,600. Headache was noted in two cases, and nausea and vomiting in one case. No other ill effects were observed.

Following the first one or two injections, the lesions became less inflammatory and less indurated, although there was no noticeable retrogression in the extent of the lesions. However, no new lesions appeared. Scaling was also diminished. In two patients who had previously been using chrysarobin, the lesions cleared up rapidly after the injections of the vaccine. In the other patients the condition presented little change until after the application of chrysarobin, following which the lesions disappeared completely in from eight to sixteen days.

The dermatitis resulting from prolonged use of chrysarobin cleared up promptly after one injection of the vaccine. One patient who had been using chrysarobin previously had developed a marked dermatitis. Following the first injection of the vaccine, the itching and erythema disappeared within twenty-four hours. Another patient who had received three injections of vaccine and was using chrysarobin ointment developed a mild dermatitis on the seventh day after the last injection. Following a fourth injection, the dermatitis subsided rapidly.

COMMENT

In general, the results of the vaccine were favorable, considering that only chronic and obstinate cases were treated. The mild cases respond readily, as a rule, to applications of chrysarobin, but in the chronic cases more vigorous treatment is necessary, and it is in these cases that the use of the vaccine finds a place.

When used alone, the vaccine does not clear up the lesions, though it diminishes the induration and inflammatory reaction. However, when used in conjunction with chrysarobin the lesions seem to yield more rapidly than under chrysarobin alone. That the vaccine has some influence and the good results are not due to the chrysarobin alone is illustrated by the three patients who had been using this remedy previous to the vaccine. No noticeable improvement was observed with the chrysarobin until after one or two injections of vaccine, when the lesions cleared up rapidly.

The treatment is simply symptomatic, clearing up the existing lesions, and offers no permanent relief. Recurrences are as likely to follow as when any other form of therapy is employed.

The use of intravenous vaccines has the advantage of easy administration, but has the disadvantage of a more or less marked reaction following the injection, necessitating that the patient remain in bed for from eight to ten hours. The autoserum injections, on the other hand, can be given in the office or the dispensary, but their preparation requires time and care, with a consequent danger of infection.

The dermatitis which results from prolonged use of chrysarobin is easily cleared up. The skin sensitiveness is diminished, and ordinary medication is more effectual and can be pushed without exciting an inflammatory reaction. When a dermatitis is already present, it disappears shortly after the injection, and local treatment is not interrupted. Spiethoff,[10] using injections of autogenous and foreign serum, points out that those dermatoses which in the course of treatment develop an especial susceptibility to chemical substances are amenable to this form of therapy. Luitlen[11] has shown by animal experiments that inflammatory skin reactions are favorably influenced by parenteral injections of autogenous and foreign serum, as also by colloidal substances, in that the skin sensibility is altered toward the irritants applied to it.

Fig. 1.—Guttate and nummular lesions distributed over the back and buttocks in a case of psoriasis.

The changes which occur following the intravenous injection of vaccine and which result in the retrogression of the lesions are not fully understood. Whether it is due to a mobilization of ferments, as observed by

9. Scully, F. J.: The Reaction After Intravenous Injections of Foreign Protein, THE JOURNAL A. M. A., July 7, 1917, p. 20.

10. Spiethoff, A. B.: Die Herabsetzung der Empfindlichkeit der Haut und des Gesamtorganismus durch Injektionen von Eigenserum, Eigenblut und Natrium nucleinicum, Dermat. Wchnschr., 1913, **57**, 1227.

11. Luitlen, Friedrich: Veränderungen der Hautreaktion bei Injektion von Serum und kolloidalen Substanzen, Wien. klin. Wchnschr., 1913, **26**, 653.

Jobling and Petersen,[12] with changes in the metabolism, or to a dispersion of the colloids[13] with biochemical changes in the serum, is still a subject of inquiry. Engman and McGarry[8] point out that hyperpyrexia may be a factor, as they observed the retrogression of

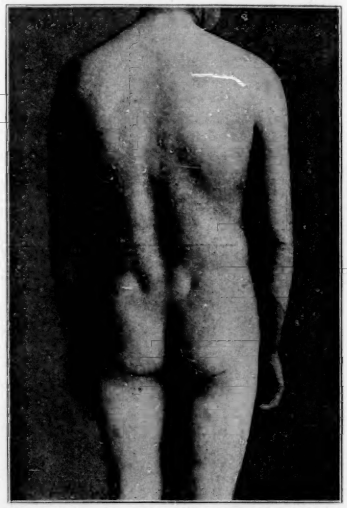


Fig. 2.—Same patient after three weeks' treatment with chrysarobin ointment topically and protein vaccine intravenously. Lesions have cleared up and only slight pigmentation remains.

the lesions of psoriasis in intercurrent infections, as pneumonia and typhoid fever.

If psoriasis were of an infectious origin, the effect of the vaccine might be explained on the same basis as in acute articular rheumatism and typhoid fever, according to the views advanced by Jobling[14] and by Teague and McWilliams.[15] However, careful research by Schamberg, Ringer, Raiziss and Kolmer[1] failed to determine any organism as the causative agent.

It may be, as assumed by Spiethoff,[10] Gottheil and Satenstein,[2] and others who have used the autoserum therapy, that the psoriatic foci are rendered more susceptible to medication, or that the skin is rendered less susceptible to local treatment allowing prolonged and stronger medication without producing a dermatitis. This seems probable from the clinical phenomena and results which were obtained.

CONCLUSIONS

1. Intravenous vaccines alone do not clear up the lesions of psoriasis, though they do lessen the induration and inflammatory reaction.

2. When used in conjunction with weak chrysarobin ointment, the lesions clear up rapidly.

3. Favorable results were obtained in chronic generalized cases resistant to other forms of treatment.

4. Chrysarobin dermatitis is prevented by the vaccine, and when present yields promptly.

5. The action of the vaccine is not fully understood, but it seems to lessen the sensitiveness of the skin to local medication, allowing uninterrupted treatment.

12. Jobling, J. W., and Petersen, William: Bacteriotherapy in Typhoid Fever, The Journal A. M. A., Aug. 7, 1915, p. 515.
13. Jobling, F. W., and Petersen, William: The Nonspecific Factors in the Treatment of Disease, The Journal A. M. A., June 3, 1916, p. 1753.
14. Jobling, J. W.: The Influence of Nonspecific Substances on Infections, Arch. Int. Med., June, 1917, p. 1042.
15. Teague, Oscar, and McWilliams, H.: Bacteriolytic Power of Normal Human Sera and of Typhoid Patients' Sera for Typhoid Bacilli, Jour. Immunol., 1917, **2**, 193.

LARGE VESICAL CALCULUS

J. P. Browne, M.D., Plainfield, Ill.

Miss A., a rather thin, anemic girl, aged 16 years, consulted me last July as she was troubled with constipation. She gave a rather obscure history of pain in the bladder and lower abdominal region, especially when urinating or having a bowel movement.

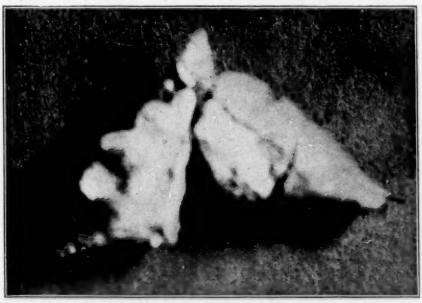
The patient stated that she thought there might be calculi in the bladder and that she had attempted to remove a small stone from the urethra with a hairpin.

A sound, when passed into the bladder, immediately struck a stone apparently at the bladder entrance to the urethra. An operation for removal of the stone was immediately advised, and the patient was removed to Silver Cross Hospital, Joliet, Ill.

A cystoscopic examination revealed the presence of a large stone with a foreign body embedded in it. Suprapubic incision for removal of the mass was determined on and immediately performed. An immense calculus 4 inches in length and 3 inches around several different circumferences was removed. The calculus had grown around a hairpin as a nucleus. The hairpin was lying in the bladder in a widely extended obtuse angle, and was covered with the deposit to within about a quarter of an inch of each end. The mass tapered from the center toward each point.

The bladder was thoroughly irrigated, the wound closed, and a retention catheter inserted. Daily irrigations were instituted, and an uneventful recovery followed.

The accompanying illustration shows the exact size of the calculus, although portions of it crumbled during removal. The length of time that the hairpin had been in the bladder could not be determined, but the enormous size of the calculus would indicate that it must have been there for months, perhaps years.



Vesical calculus formed around a hairpin as a nucleus.

Selective Gymnastics.—The director of hygiene of the Dayton, Ohio, schools has recommended to the school authorities a plan for gymnastic instruction of the school pupils on a selective plan. The children will be divided into groups after careful physical examination, and each group given such exercises as are adapted to their strength, requirements, etc.

Military Medicine and Surgery

THE WORK OF THE AMERICAN RED CROSS MISSION TO RUSSIA*

FRANK BILLINGS, M.D.
Chief of the American Red Cross Mission to Russia
CHICAGO

The mission that I had the honor to lead into Russia was composed of twenty-one commissioners; I have never been associated with a finer body of men. Those from Chicago, Major Wilbur E. Post, Major Harold H. Swift, and Major Raymond Robins, made me feel proud of Chicago. Each of those men was on tiptoe, as indeed was every other member of the mission. There are some members of that mission who need mention; but when I do mention some of their names it does not mean that the work of others on the mission was less notable. As it happened, because of conditions in Russia and because of the character of the men, Raymond Robins did a notable work and is continuing to do notable work there. If Chicago does not know Raymond Robins yet, I want to say that Chicago should cherish and honor Raymond Robins because if ever man did, he loves his fellow men.

All the men from the East did notable work, and some of us left this country without much sacrifice; but this was not true of all. One man whom I invited to go was with me in Russia twenty years ago. I knew that the one being on earth that made life worth living to him was an invalid, and that perhaps he could not go; but when his wife heard that he was invited to go she said to him and to his friends that she would be made absolutely happy if he would go, because she felt her illness of years had kept him from doing the things for his country that she desired him to do. And when they bade each other good-by, it was with the feeling that they would never see each other again. He left with the mission, and in August that patriotic woman died. Can you think of any more sublime patriotism than that expressed by this noble woman and by her husband, Dr. W. S. Thayer, who went with me to Russia? Dr. Thayer remains with the other members of the mission left in charge of the Red Cross work there, the chief of the medical department.

We were four months away from Chicago, and were two months in Russia. That is but a short time. It would, therefore, be presumptuous on the part of any one who would say that he brought a final word of Russia to you. Even those who have lived in Russia for years do not understand Russia; but because of the nature of our mission, and because of the problems put up to it by the War Council of the Red Cross and by Mr. Root, we made a broad survey of conditions in Russia, including an investigation into conditions that involved the revolutionary government, the sanitary department of her army, the public war relief organizations of Russia, food for the army, and many other problems related to the civilian population. This necessarily brought knowledge to the members of our mission that we otherwise would not have obtained, and it is because of this that I presume to tell you something of Russia tonight.

Fig. 1.—Lieut.-Col. Frank Billings, chairman of the mission.

POLITICAL CONDITIONS IN RUSSIA

To make you understand something of what we saw in Russia, I should like to give a perspective of that great nation. Those who have not been in Russia think of Russia as a big country, as it is; but you do not know how vast it is. One thinks of Siberia as a place that is barren, cold, inhospitable, and not fit for the habitation of man, and a place which Russia under the old régime has used as a prison house for its civilian and political prisoners. That is not true. Russia, including Siberia, is vast, and when one travels through it the distance from one point to another seems interminable. The Trans-Siberian Railroad extends 5,500 miles from Vladivostok to Petrograd. The territory in extent, as it existed before the war, is over 6,000 miles from east to west, and over 2,000 miles from Archangel to Odessa. This vast country is populated by only 180,000,000 people. I say only 180,000,000 because there is room for 500,000,000 and more. Siberia alone, with over 5,000,000 square miles, has only about 6,000,000 people, and these are mainly scattered along the Trans-Siberian Railroad, which traverses one of the most beautiful countries that man may look on. It is like traveling through our beautiful Western States. There are magnificent forests, vast in extent, beautiful lakes here and there, with a wonderfully fertile soil, as evidenced by the growing crops when we passed through it. We saw herds of cattle, of sheep and of swine everywhere.

As one met the people at the stations, soldiers and civilians, they were as fine looking a lot of manhood and womanhood as one could wish to see anywhere.

* Address delivered before Physicians Club of Chicago, Nov. 1, 1917.

Think of that vast country, with a vast population, as compared with ours, ruled for centuries by an autocratic power! When there was a czar more humane than others, a bureaucratic cabinet made him relatively

Fig. 2.—Major William S. Thayer, Baltimore.

as cruel as any other, and not only held this great people in bondage, but kept them illiterate for a purpose; kept them in serfdom for many years; did not let them think or act for themselves; and when we arrived in Russia these people, autocratically governed, had been at war for three long years with the most cruel nation the world has ever known. She had fought not the good fight that her allies expected of her, but nevertheless she had fought; and think of the long line that she attempted either to defend or from which to send an offensive over 1,200 miles of battlefront. She had placed millions of soldiers into the army. From the beginning there have been mobilized 16,000,000, and of this number 6,000,000 may be accounted for; 2,000,000 or more are prisoners in Germany and in Austria. A large proportion of the remaining 4,000,000 were killed; others are incapacitated for further service in the army either by wounds, by a crippled condition, or by invalidism. That leaves at the present time about 10,000,000 soldiers under arms. Of that number, about 3,000,000 are at the front covering 1,200 miles, and the remainder are in barracks all the way from the front to Siberia and down to the Crimea, so that everywhere in Russia at the present time one meets soldiers.

In the midst of this war, during which there have been made disastrous advances and masterly retreats, her soldiers have been well fed and well clothed, but not always well munitioned or well armed. Many of them went to the front in the earliers years of the war without a musket, understanding then that they would become armed when they captured guns from the enemy or would secure them when their fellow soldiers fell. I have heard the officers say that these men fought the Germans with their bare hands during the first years of the war. They were good soldiers, and then in the midst of this terrible war, with the mismanagement of the old régime, with traitors in her cabinet, came a revolution almost in a night. One hundred and eighty millions of people, who had been held under autocratic sway, were told they were free to do what they pleased. Can you wonder that those people were more or less confused? They had known something of democracy, but not much. What they knew of democracy under autocratic rule they learned of themselves, for they established, away back in 1865, the zemstvo unions in their provinces. To the local zemstvos, delegates were elected by the peasants, and the central zemstvos in Moscow was represented by delegates elected by the local zemstvos. Through the zemstvos they established schools, cared for their sick and destitute, and learned better agricultural methods. When they advanced too far in that democratic movement and were improving too rapidly, the autocratic government stepped in and appointed a member of the cabinet in Petrograd and a member of the government in every province to modify and shape their activities.

THE PROVINCIAL GOVERNMENT

While they knew something of democracy gained from the zemstvos, it was colored with socialism, injected from the outside. Therefore, after the revolution there was established in Russia what may be called an experimental laboratory of socialism in the form of a provincial government. A cabinet was

Fig. 3.—Car on mission's special train showing painted canvas legend on side of car, "American Red Cross Mission to Russia."

formed through the Duma, the fourth Duma. The Duma was the first legislative body that the people of Russia had ever enjoyed, and it formed a new cabinet because the extreme socialists, the Maximalists or Bolsheviki, and the Workmen's and Soldiers' Council,

the representatives of the strongest socialists of Russia, did not care to take the responsibility of the first cabinet. Therefore, the Duma formed the first provisional cabinet. In that cabinet were some of the biggest men of Russia. Prince Lvov was the premier, Mr. Milyoukoff the foreign secretary, Mr. Routchkoff the minister of war, and Mr. Kerensky the minister of justice, all men of fine character. The other cabinet ministers were of less importance. Immediately after the cabinet was formed, the Duma legislated itself out of existence. The socialists demanded and obtained the abolition of the death penalty and of all discipline in the army.

Fig. 4.—Bread line in Moscow.

The minister of agriculture declared an agrarian policy which has been one of the most harmful things done in revolutionary Russia. He declared that the imperial lands, the lands of great estates, and even the lands held by eight or more million peasants should revert to the state and be divided among the people of Russia. They demanded that the war, if continued, should be fought without annexations and without indemnities. They ordered the minister of war to recognize committees in the army who should supersede the officers and decide military tactics and other conditions of the army, including its domestic functions. The men of character in the cabinet refused, and so the first cabinet lasted but a few weeks. That left Russia without any legal body to form a new cabinet, and in revolutionary Russia they soon came to a satisfactory method of doing this. The political parties, including this vast body of socialists, the greatest number in Petrograd, agreed to the formation of a coalition cabinet in which the socialists dominated. Neither of these three great men I have named could accept a place in the cabinet, and so the next one was formed of men of lesser importance, but with Mr. Kerensky, who was minister of justice at first, the minister of foreign affairs, and Mr. Terestchenko, who had been in the first cabinet, also in the new one. The people accepted the cabinet of this provisional government, which had been created without legal status. The second cabinet lasted only a little while, and so it has gone on until there have been six cabinets formed since the revolution. The last one was formed about the middle of September. Mr. Kerensky has been in each cabinet, and after the third cabinet he rose to the position of premier, and Mr. Terestchenko has occupied the next important place, that of foreign minister. I have taken time to say this, for if you do not understand the political conditions as they exist in Russia today, you cannot understand the spirit and the character of the people of that country, who not only recognize but support a government formed as I have attempted to describe.

The army under this revolutionary system became disorganized because of the abolition of the death penalty and of discipline, and because of the appointment within its own ranks of committees of soldiers who dictated to the officers what should be done. What could follow but disaster? In spite of all disorder, they have held the trenches; they made an unwise advance in Galicia last summer. At the Riga front some units fought well and others not at all. Disorganized and inefficient as they have been, still they have held twenty-two German corps at bay all summer, and they still hold them. Amid this disorder, sanitation was neglected. When sanitation is neglected infectious diseases and infestation with vermin increase, with the result that there were more sick soldiers than Russia had had since the war began. But in spite of these things the line holds.

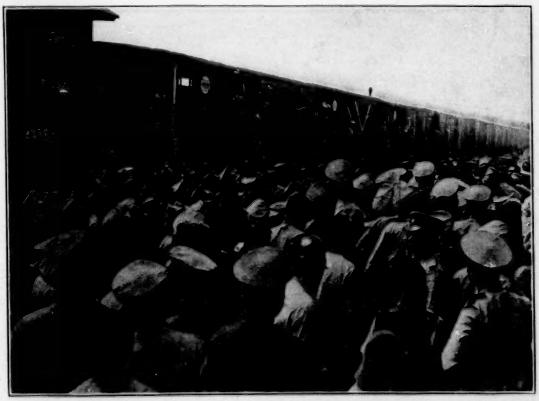


Fig. 5.—Crowd of Russian soldiers at one of the stations, showing a Russian troop train.

But what of the disorder in the rear as a result which must necessarily come? Even under the old

régime there was mismanagement of her civil government. The productive industries, which began to decline during the old régime, after the revolution diminished more than ever. Strikes occurred after the revolution because the peasants and soldiers believed that liberty meant the right to be idle, just as our liberated slaves did after our war. The flour mills gave a diminished output; transportation was more or less crippled because the industries were diminished in productiveness and because of labor strikes. All of these factors led to a diminution in the value of the ruble.

Fig. 6.—Group of Chicago members of the commission at the mission headquarters in Petrograd. From left to right: Lieut.-Col. Frank Billings, Mr. Samuel Harper, Majors H. H. Swift and Wilbur E. Post.

Mr. Root left a letter at Vladivostok in which he stated to our mission that the food problem in Russia was the crux of the situation; that if food scarcity continued in the large cities like Petrograd, Moscow, Kiev, and in certain provinces, riots would recur as they did in 1916-1917. With riots in the rear, great disorder would occur at the front; the soldiers would evacuate the trenches, and that would mean that a greater number of American lives may be sacrificed in France.

It did not take much investigation to show that if our mission did help in the food problem it would not be as a Red Cross mission, but as a diplomatic body.

REASONS FOR A HOPEFUL OUTLOOK

I have told you some of the worst things of Russia. Let me tell you why I have come back very optimistic about Russia with this background, with this sort of perspective of that great nation. The provisional government of Russia, composed of men chiefly socialists, in the beginning was, as I have said, an experimental laboratory of socialism. The socialists the world over looked on that socialistic government as one that would be copied everywhere; that it would be eminently successful, and that Russia would be a very democratic government because based on socialistic ideas. This government has been in existence about seven months, and in that time those who were strong socialists in the early cabinets, those who believe in socialism as the bulwark of democracy, have learned a lesson. The result is that the cabinet of today in Russia is the strongest she has had since the revolution. Mr. Kerensky is a man only 34 years of age, a lawyer, who had never had any experience in administration or organization. He was a very extreme socialist, had been in every cabinet, and had been premier in four of the cabinets. It was through him that discipline in the army and the death penalty were abolished. Responsibility has brought a change in the man. He has restored the death penalty. I saw in one of the newspapers yesterday that the death penalty had not been restored. It has been restored because this was done while we were in Russia, and men who have refused to obey have been shot. He is gradually reestablishing discipline. Americans ask, Why does he not establish it at once and by force if necessary? Remember that the government was started by socialists, who were in the majority, and any attempt to suddenly bring back order in the army would have meant counterrevolutions. Disorder can be overcome only

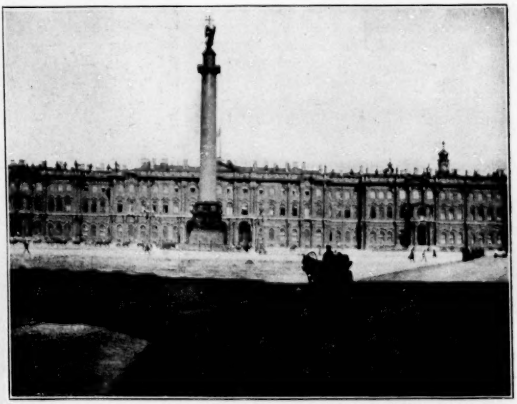


Fig. 7.—The Winter Palace in Petrograd, containing a Red Cross hospital of 500 beds, government offices, etc.

by the education of the people through bitter experience, and they are receiving that education. They have learned that socialism is not and cannot be the fundamental foundation of a democratic liberty. Mr. Kerensky has learned it so thoroughly that he has repudiated socialism, and the Bolsheviki have repudiated him.

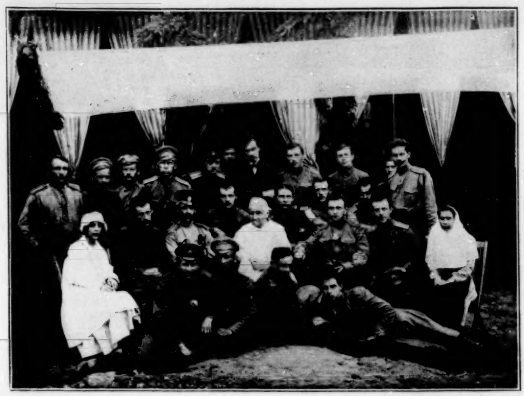


Fig. 8.—Madam Brosko-Broskovskeia, grandmother of the Russian Revolution, seated with a company of Russian officers and soldiers.

KERENSKY

Mr. Kerensky is an honest man. He looks at one squarely; he talks to one frankly. He is quick and alert physically, and just as alert mentally. He is patriotic. When I saw Mr. Milyoukoff last, three days before we came away, I asked, "Is Mr. Kerensky honest?" He replied, "Yes." "Is he patriotic?" "Yes. He is so intensely patriotic that he would die tomorrow if by so doing he could save his country."

The members of the cabinet, the people of Russia of all classes, have learned the lesson by bitter experience, that liberty has its price. That the price is law, order, discipline, and submission to leadership.

I saw enough of these men of the cabinet, talked to them about what they were doing, to make me believe they are honest, patriotic, and that they will finally bring the people of Russia into a condition of order with the proper understanding of what democratic liberty means.

THE WAR RELIEF ORGANIZATIONS

What else did we see that is heartening? The war relief organizations of Russia are the most wonderful I have ever seen anywhere. The sanitary deparment is headed by a physician who is one of the most celebrated bacteriologists and hygienists of Russia. He is a man of fine character, and the men on the staff are of the same fine type. They have done very efficient work in this war under the old régime and under the revolution. Remember that Russia, like America, secured many things from Germany before the war. They received as many packages of drugs and chemicals marked "Made in Germany" as we did, and when the war came they were without them. You and I had looked on the Russians as incapable of making those things, and yet they have gone ahead and manufactured them. The sanitary department, which conducts a factory in Petrograd for making drugs, surgical supplies, artificial limbs, crutches and other necessary supplies for the medical department of the army, is splendidly administered. They do not have the materials sometimes with which to make things, but when they have them they make them well. The sanitary department of the army at the front does good work, with the Red Cross and zemstvo union in field and ambulance work and in base hospitals. The front is one place where the three great war relief organizations cooperate; back of the front the cooperation ceases. The sanitary department of the army has plenty of medical men, but does need help in certain supplies. Motor ambulances and possibly an American ambulance personnel, including sanitarians, are much needed by the army.

The Russian Red Cross during the old régime was supported chiefly by the royal family. At the time of the revolution that income ceased, and since that time it has received governmental aid. It is a big organization. It tried to attach the mission to it because we were sent by the American Red Cross; but as we were sent to the Russian people and to no single organization, we told them we would cooperate with the Russian people as represented in the Red Cross, the zemstvo union and the sanitary department of the army. The Red Cross is doing great work. It has enormous factories and enormous supplies; more than we have. Its supply house in Petrograd is an enormous structure comprising many buildings. Dr.

Fig. 9.—Group from the mission en route homeward through Siberia, including two Cossack guides. From left to right members of the mission are: Major W. E. Post, Chicago; Lieut.-Col. Frank Billings, Chicago; Majors H. C. Sherman, Columbia; H. H. Swift, Chicago; G. W. Whipple, Harvard, and C. E. A. Winslow, Yale.

Orden, head of the supply department, told us that there were 50,000,000 meters of surgical gauze on hand; that they had 5,000,000 suits of underclothing in stock. They lack some of the things that America may furnish. One of the finest sights in our experi-

ence we saw at Petrograd when we visited the Red Cross Hospital of 500 beds in the winter palace, the best use to which the winter palace was ever put. The winter palace is also notable at this time as the residence of the grandmother of the revolution, Madam Brosko-Broskovskeia. Under the old régime a political prisoner in Siberia, she now enjoys luxurious quarters in the palace while the ex-czar takes her place in Siberia. At Moscow the Red Cross had supply houses with hospitals equally as good.

THE ZEMSTVO UNION

But it is the great zemstvo union of which I want to say the most. The zemstvo union, as I mentioned a moment ago, with its branches in the provinces, has broadened its activities during this war. The old régime did not furnish the soldiers with sufficient clothing, boots, shoes, arms, or with munitions, so that the men were seriously handicapped. The zemstvo unions represented by millions of people, with the peasants as its fundamental basis, went to work and in 1915 and 1916 they tanned 500,000 raw hides to make boots and shoes for the soldiers at the front. They spun wool, and they made clothing for their soldiers. They furnished ambulances and field and base hospitals. They helped to furnish the evacuation hospitals together with the Red Cross and sanitary department of the army. During the war they have furnished 500,000 beds for the soldiers. Can you get that number? 500,000 beds! In Chicago we felt quite elated when we furnished four base hospital units of 2,000 beds all together. The Russian people have done an enormous amount of work, and have done it well. We had a committee visit the front. It found that the work was well done; but since the revolution there has been more or less embarrassment because of the lack of discipline among the soldiers, who refused to be inoculated with antitetanic toxin and also refused to be vaccinated as a preventive measure against cholera, typhoid and paratyphoid. The committee reported that the men were disregardful of sanitary measures at the front, but in spite of these things, the medical officers carry on their work and by persuasion have been able to do what they could not command the force to do. The three public war relief organizations operate 100 sanitary trains to and from the front. These are the evacuation trains that take the wounded and sick soldiers from the base hospitals to the rear. Russia is divided into seven evacuation districts, and of these the district of which Moscow is the center is the largest. In the Moscow district there are 200,000 beds, of which 20,000 are in Moscow. A meeting is held every day, and they know the number of soldiers coming from the front. When the wounded soldiers reach Moscow they are bathed and have their hair cut and their clothing is disinfected in a most modern way. Those who are sick and severely wounded are kept in Moscow hospitals, and those who have a lesser degree of wounds or illnesses are evacuated to the rear within two or three days. During the war the Moscow district has taken care of sick and wounded soldiers to the number of 2,700,000. Other districts have taken care of the remainder, a total approximately of 4,000,000 wounded and sick soldiers.

Fig. 10.—Members of the American Red Cross Mission to Russia at Nikko, Japan.

THE CHARACTER OF THE RUSSIAN PEOPLE

The real substantial hope in Russia is the character of her people. In spite of the fact that the Russian people as a whole are illiterate, they possess characteristics that are so admirable, that it sets them apart from all other people that we have ever known. They are orderly, good natured, good hearted and industrious. They are the most wonderful technicians the world has ever known. The untutored peasant spins, weaves, tans leather, makes boots and shoes, and makes munitions. He will make a house with an ax and some wood. In spite of a long war, in spite of the revolutionary conditions, in spite of the absence of all police power and in spite of the erroneous ideas of liberty, there has been less disorder since July 4, 1917, the date of the last Petrograd riots, than there is in America today. When one travels, as some of us did, from Siberia to Moscow, and Petrograd to Archangel, to Odessa, to the front, and to various other places, we could not help but be impressed with the good order of these people. Sometimes soldiers would come into occupied compartments on the train, but they would not create any disturbance other than

to impose their presence on one, as a harmless expression of their understanding of democratic liberty. I saw—and I know I speak for the other members of the mission—less disorder in Russia in two months among its civilian population than I may see in Chicago in any week in the year.

There is food scarcity in Petrograd, Moscow and in a few provinces. This scarcity in certain places is due to faulty distribution of food. Siberia, Southern Russia and Bessarabia have an abundance of food. Faulty distribution of food is due to lack of efficient river and railroad transportation. There was a like food scarcity in Petrograd and Moscow in 1916-1917 during the old régime. There is a lack of food and a lack of clothing, boots and shoes and many things the Russian citizens need. This is illustrated by the fact that each one must have a card and stand in line to secure supplies. The Russian accepts this quietly and good naturedly, never making a protest, never trying to get ahead of his neighbor and, if necessary, lying on the sidewalk all night that he may obtain the needed articles early the next day. He is perfectly satisfied if he finally gets the food and other things that his card calls for. Can you imagine a group of Americans lying on the sidewalk with cards to secure food, not trying to get ahead of their neighbors and not protesting to those in authority about it?

When we arrived at Vladivostok we were given the same train that the Root mission had used to come out of Russia. It is one of the imperial trains, with a combination diner and observation car—the same car in which the late czar, by a stroke of the pen, became Nicholas Romanoff. It is a beautiful train, but not so comfortable as many of our Pullman trains. We had plenty of food on the train, so that we went into Russia in a luxurious way. When we reached the larger towns and stopped for half an hour, the soldiers would read the Red Cross placards with legends in Russian on the windows, and received us with great enthusiasm. The Russians are great orators; so we would have two or three short speeches at every station, and always had to make replies to them.

When we reached Irkutsk, the capital of Siberia, there were a dozen or more freight trains loaded with soldiers mustered in from that region, going to the front. We ran in between them. We saw them bidding good-by to their wives and sweethearts, buying black bread and raw cucumbers, eating and singing. They greeted us enthusiastically, and made speeches. As we moved out of that station they came out of the freight cars and cheered us heartily. I said to myself: Fancy a Russian mission going to Washington and halting at some town en route and having a lot of our soldiers in freight cars halted in the same station. How many of our boys would cheer them? That is the spirit of the Russian soldier; that is the spirit of the Russian people.

THE COSSACKS

In addition to the spirit manifested by the people of Russia, one of the most important factors stimulating one's optimism of Russia's future activities in the war is the fact that, taken as a whole, the Cossacks are patriotic, democratic, submit to discipline and are excellent fighters. It is difficult to make an estimate of the number of Cossacks in the Russian army. It was named as from one to three millions and the minimum is certainly one and one-half million men.

CHEVALIERS OF ST. GEORGE

In addition to the Cossacks there is a society known as the Chevaliers of St. George. This numbers eight hundred thousand men. The members of the society have been decorated with the order of St. George for some act of bravery or other service to the country since the war began. The members of the mission met many groups of the Chevaliers of St. George and found them desirous of the reestablishment of law and order and of discipline in the army. They asserted many times that they would fight to the last. Always on the battle front there have been units of soldiers, sometimes large, sometimes small, who have fought well, while others failed in the offensive. These loyal units are usually composed of Cossacks and of the Chevaliers of St. George. We may count, therefore, on not less than two to three millions of loyal troops in Russia who will submit to discipline and who will fight.

TALK OF PEACE

In Russia today you hear no word, excepting from pacifists, excepting from the paid agents of Germany, and there are many of them, of a separate peace. It is believed by the present leaders in Russia that Russia will have an organized army by spring, and they say that she will never lay down her arms to an autocratic Germany. The trouble is that Russia is isolated. In Russia we were as much isolated in one sense of the word as if we had been on an uninhabited island. There is no news of America in Russia except what comes through German sources. In the Russian newspapers it is sometimes printed that America is in this war for sordid gain. In one paper I saw it stated that America was the vassal of England, and that England wanted to dominate the world. That is the sort of news they get about America. There is no news of the fine young men of our country who have registered, no news of conscription, no news of our numerous training camps, no news of the vast sums of money to carry on this war, and even no statement of the wonderful documents that have been issued by our great President. Can you wonder, therfore, that the Russians, who do not receive kindly attention or any information from our country that is authentic, feel themselves isolated as if they had to fight their battles alone? If you could have seen the expression on the faces of the officers of the relief organizations when we took the lists of our supplies to them, it would have thrilled all of you. They looked at the lists of supplies and said with a smile, "What is the price of this?" "How much more can we get of this or that," and "What is the price?" When we told them there was no expense, that this was a gift of the American people through its Red Cross to the people of Russia, the tears came into their eyes. It was the first time, in all probability, small as it was, that any nation has ever given Russia anything. Our allies do not understand Russia. They have not helped her as they should. They have not helped her in the materials she needs. She needs financial aid. They have not helped her in that spirit in which a great democracy should help a sister republic in its infancy.

AMERICA'S DUTY TO RUSSIA

Russia feels kindly toward America. She looks on us as her best friend. For what the Root commission has done, for what Mr. Stevens of the railroad commission has done, and for what we have done through

our humble mission there, Russia feels grateful. She feels she has our friendship and she asks for more, but not greedily and not for very much. For certain things she desires to pay. This is America's opportunity. If America will help Russia at this time not only with money, but with the means whereby she can start a Russian propaganda to obtain news from America as the other allies are doing, great good will be accomplished. I am happy to say to you that we have already started that propaganda through the generosity of Col. W. B. Thompson, vice chairman of the mission. It was put before our President, and he has accepted it and has further agreed that it will be supported until Russia has adequate information of what is going on in America, and that America is her friend.

I want to repeat: I have come back full of optimism about Russia. She is doing a great work. She has a large army that must be properly cared for. She has a lot of fine men; even though they are socialists they are intensely patriotic, and are learning to be rational through the responsibility that has come to them as members of the government. We owe to them our help to form a stable democracy, and we can do it. If we do that, we shall save American lives in France; if we do that, we shall finally cement the friendship of Russia, which is already ours.

122 South Michigan Avenue.

DEVICES FOR THE SANITATION OF TRENCHES

SIMON BARUCH, M.D.
NEW YORK

Any enhancement of the comfort, hygienic condition and safety of our defenders merits speedy attention. For this reason I venture to suggest some devices that presented themselves to me while reading the description of trench sanitation by Dr. C. C. McCulloch.[1]

McCulloch writes: "It naturally adds much to the efficiency of this system if the urine can be handled separately, particularly in incinerator methods. This is done in some cases by separate urine buckets, in others . . . by urine soakage pits."

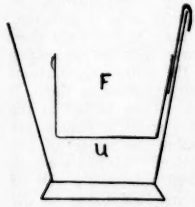


Fig. 1.—Emergency bucket, used in early trench construction: *F*, feces; *U*, urine.

PLAN 1.—A method of separating the liquid from the solid excreta is illustrated in Figure 1 as applicable to the bucket now in use according to McCulloch's illustrations.

A separate bucket for the solids is suspended by a strong flange from the posterior upper rim of the large bucket now in use. It will be noted that the anterior rim of the feces bucket is flattened to increase the space for urinating. The urine flows downward and is thus separated completely.

The entire apparatus may be carried to the disposal pit, as indicated in McCulloch's Figure 3. The solids may be dumped into the pit and the fluid poured anywhere that the sanitary officer may direct.

1. McCulloch, C. C.: Sanitation in the Trenches, THE JOURNAL A. M. A., July 14, 1917, p. 81; July 21, 1917, p. 183.

PLAN 2.—A better apparatus may be made (Fig. 2) of a strong metal bucket the size of that now in use, with metal seat and hinged lid.

Mr. Penfrase of the J. L. Mott Iron Works suggests that a pressed steel bucket would be more economical, because lighter and more durable than galvanized iron.

The advantage of this metal arrangement is obvious. Even the cost, if this deserves to be considered when

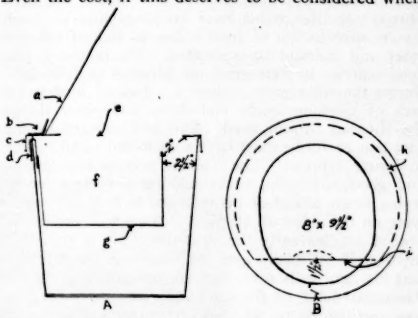


Fig. 2.—Metal bucket: *A*, section; *B*, top section; *a*, hinged cover; *b*, stop to make cover self closing; *c*, detachable cover; *d*, support holding feces bucket; *e*, opening, 8 by 9½ inches; *f*, feces bucket, with a capacity of 1½ gallons; *g*, urinal, with a capacity of 2 gallons; *h*, cover of bucket; *i*, front of feces bucket.

the welfare of our boys is to be promoted, must be less. Transportation and sanitary conditions also are improved by avoiding wood. This applies to the succeeding devices.

The foregoing buckets may readily be conveyed to the trenches when they are first constructed. When, however, the trenches are fairly well established, the following devices present advantages that appear to me obvious.

PLAN 3.—Noting in McCulloch's diagram (Fig. 1) showing arrangements for food, water and the handling of excreta that under "conservancy" the buckets are placed in close proximity to the urine pits, it occurs to me that Figure 3*A* presents an ideal plan. It shows a septum with sufficient space for urinating, leaving the entire posterior compartment for the solids. The urinal portion terminates in a tube sufficiently long to fit loosely in a wooden, earthware or galvanized iron box or in one of the cones illustrated in Figure 4 of McCulloch's article rising from the urine pit.

The bucket and covers now in use may be continued with the exception of the added urinal septum, which is easily soldered on or riveted to the anterior part of the bucket. In this plan, the urine soakage pit must obviously be made larger.

So far I have suggested the continuation of the buckets now in use. I venture to add the following for the careful study of our military hygienists:

PLAN 4.—When the bucket is carried to the disposal pit, the wooden fly proof cover may be left in the trenches, if the feces are covered by a cardboard shaped to the bucket. This would prevent odor and access to flies. A rack for holding a supply of these light covers is provided on the frame support.

A still greater improvement would be to place a waterproof paper container within the feces bucket. This would obviate the disagreeable and unwholesome

scraping and cleansing of the bucket after the mass has been dumped into the disposal pit, and save its wearing.

Before removal, the solid excreta are covered with the cardboard cover, and other refuse of light character is thrown on it to fill the bucket. The bucket, now holding at least threefold more material than in the method illustrated in McCulloch's Figure 3, may be conveyed just as readily to the disposal pit and there dumped for incineration, etc.

Care must be taken not to break off the tube at the lower end of the urinal compartment. It should be made strong, rectangular, and should fit loosely into the urine soakage pit entrance.

PLAN 5.—For trenches that are being occupied for long periods, as now in Flanders, the following arrangement offers obvious advantages:

As indicated in Figure 3*B*, the urinal portion is made separate, and is secured to the corner supports of the frame anteriorly. The feces bucket is flattened to have its anterior wall correspond to the shape of the posterior wall of the urinal. For additional security and prevention of spilling between the two walls, a

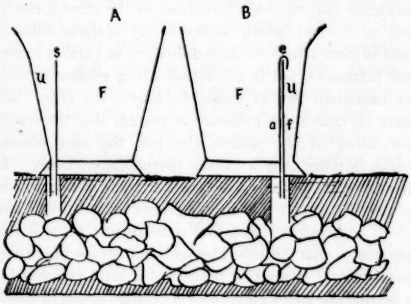


Fig. 3.—Permanent bucket, used in established trench construction: *F*, feces bucket; *U*, urinal; *s*, septum forming a urine conduit anteriorly; in *B*, separate urinal is secured to frame, and feces bucket is united to it by a flange; *e*, anterior part of feces bucket hooked on posterior portions of stationary urinal; *a*, anterior wall of feces bucket; *f*, posterior wall of separate stationary urinal.

flange is cut in the anterior wall of the septum to fit firmly but loosely over the posterior cut out wall of the urinal. The latter is so arranged that it terminates in a strong tube. In this plan the feces bucket alone is removed, the feces being covered with a paper or metal lid. If the bucket has been lined with paper, the arrangement is obviously ideal.

In Plans 4 and 5 the feces bucket has its capacity increased about 33 per cent., which means less frequent emptying, and consequently less exposure to the enemy's fire, less labor, and more comfort for all concerned. The base under the bucket, shown in Figure 2 of McCulloch's article, is omitted in my device, in order to facilitate transportation in large quantities by sliding the bucket into the preceding one, forming nests.

The man behind the gun is made more efficient and more safe, the chief considerations.

Health a Community Asset.—Health is not the property of the individual who enjoys it, but of the community; disease menaces not only the sufferer, but all with whom he may come in contact.—BERTHA OTT, *Public Health News* (N. J.).

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

SILVER PROTEIN COMPOUNDS

Silver protein compounds possess the antiseptic action of silver nitrate to some degree. They do not precipitate proteins and are relatively or entirely nonirritant. They are frequently used as substitutes for silver nitrate, especially for the prophylaxis and treatment of the sensitive mucous membranes, particularly in gonorrhea, conjunctivitis and other infections of the urethra and of the eye, ear, nose and throat.

To prepare solutions of silver protein compounds the substance is sprinkled on distilled water and allowed to dissolve; in this way the formation of lumps, which dissolve slowly, is avoided.

SILVER PROTEIN-SQUIBB.—A compound of silver and gelatin, containing 19 to 23 per cent. of silver in organic combination.

Actions and Uses.—See general article on Silver Compounds, under Silver Protein Compounds.

Dosage.—Silver protein-Squibb is used in solutions containing 1 to 25 per cent., or more. It is also used in the form of bougies or suppositories.

Manufactured by E. R. Squibb and Sons, New York. No U. S. patent or trademark.

Silver protein-Squibb is produced by the interaction of silver oxide and gelatin in the presence of an alkali at a temperature of 80 to 100 C. When combination has occurred, the solution is concentrated in vacuo and the product scaled.

Silver protein-Squibb occurs in the form of black, lustrous, odorless, non-hygroscopic scales. It is very soluble in distilled water; insoluble in oils and alcohol.

No precipitate is produced when sodium chloride solution is added to an aqueous solution of silver protein-Squibb. An aqueous solution of silver protein-Squibb does not coagulate albumin; it is decomposed with precipitation by addition of free acids; ferric chloride decolorizes the solution.

Place about 0.5 Gm. silver protein-Squibb, weighed accurately, in a Kjeldahl flask together with 10 Gm. potassium sulphate and 10 Cc. of strong sulphuric acid and heat until the contents are colorless or only faintly yellow and allow to cool. Dilute the contents of the flask to about 100 Cc. with water, add ferric ammonium sulphate test solution as indicator and titrate with tenth-normal potassium sulphocyanate volumetric solution. The silver content corresponds to not less than 19 per cent. nor more than 23 per cent. of metallic silver (1 Cc. tenth-normal potassium sulphocyanate is equivalent to 0.010788 Gm. Ag).

ARSENPHENOL-AMINE HYDROCHLORIDE.—Arsenphenol-Aminae Hydrochloridum.—$HCl.NH_2.OH.C_6H_3As:As.C_6H_3.OH.NH_2HCl+2H_2O$.—The hydrochloride of 3-diamino-4-dihydroxy-1-arsenobenzene, corresponding to 31.57 per cent. arsenic (As).

Actions, Uses and Dosage.—The same as those of salvarsan (see New and Nonofficial Remedies, 1917, p. 45).

Arsenobenzol (Dermatological Research Laboratories).—A brand of arsenphenol-amine hydrochloride.

Manufactured by the Dermatological Research Laboratories, Philadelphia Polyclinic, Philadelphia, Pa. (General Drug Company, New York City). No U. S. patent or trademark.

Arsenobenzol (Dermatological Research Laboratories), 0.6 Gm. Ampules.—Each hermetically sealed ampule contains 0.6 Gm.

ACETYLSALICYLIC ACID (See N. N. R., 1917, p. 265).

Acetylsalicylic Acid-Milliken.—A non-proprietary brand complying with the standards for acetylsalicylic acid. Sold only in the form of capsules and tablets (see below).

Acetylsalicylic Acid-Milliken Capsules, 5 Gr.—Each capsule contains acetylsalicylic acid-Milliken 5 grains.

Acetylsalicylic Acid-Milliken Tablets, 5 Gr.—Each tablet contains acetylsalicylic acid-Milliken 5 grains.

Manufactured by Jno. T. Milliken & Co., St. Louis.

Acetylsalicylic Acid (Aspirin), Monsanto.—A non-proprietary brand complying with the standards for acetylsalicylic acid.

Manufactured by Monsanto Chemical Works, St. Louis.

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SATURDAY, NOVEMBER 17, 1917

THE ALLEGED FORMATION OF CONNECTIVE TISSUE FIBERS FROM FIBRIN

In the progress of scientific theories it is not uncommon to find opinion swinging alternately back and forth between two seemingly conflicting views, until a sufficient accumulation of facts finally permits an incontrovertible judgment to be formed. Something of this sort seems to be going on in relation to a debated feature of wound healing. The generally prevailing view, as was pointed out some time ago in THE JOURNAL,[1] has been that the fibrin, in wounds healing by first intention, forms a temporary tissue which holds the wound surfaces in place and stops up the wound, thus preventing infection. Later the fibrin disappears, not by liquefaction, but through an actual consumption by the new tissue cells, which show a positive chemotropism to the fibrin mass and are thus attracted into the fibrin clot in large numbers. The permanent tissues that go to fill the wound space are then formed by these cells through an intracellular action.

Baitsell[2] of Yale University has observed that a fibrin clot formed from plasma, under conditions in which the now familiar "tissue cultures" are carried out, may be transformed into a fibrous tissue which resembles connective tissue. Sometimes the plasma clot surrounding the embedded living tissue became almost completely transformed, by a fusion and consolidation of the fibrin elements, into the new fibrous tissue. Similarly, in experimental wounds on frogs there was a coagulation tissue formed by the clotting of the blood and lymph, and in this a typical fibrin net was present. Later this fibrin net was directly transformed into a new fibrous tissue containing bundles of wavy fibers as noted above. In fact, this process was found to be identical with that which had been previously found to take place in the fibrin clots in living cultures of adult frog tissues.

Lambert,[3] while admitting that in their physical character the newly formed fibrils resemble the collagen fibrils of true connective tissue, believes that the resemblance is a superficial one and that it is not of importance in a differential study. The question of the participation of connective tissue cells in the genesis of such fibrils in healing wounds is at issue. In new experiments in which living tissue has been completely excluded, Baitsell[4] has now shown the formation of a fibrous tissue from a plasma clot in direct response to the influence of purely mechanical factors of various kinds. The experiments have eliminated all possibility of the new fibrous tissue's being formed by cellular action. The structure of the new fibrous tissue as shown by a histologic study of the prepared material closely resembles that of regular connective tissue.

The fact, says Baitsell, that the new fibrous tissue is similarly formed in wounds, that is, by a direct transformation of the fibrin clot, where it functions as a regular connective tissue for a time at least, gives clear evidence that the transformation of the plasma clot is not an artefact, which occurs merely in tissue cultures and in clots that have been subjected to various external influences, but is a reaction which evidently plays an important part in wound healing in the frog. We have no conclusive evidence at present that the transformation of the plasma clot into the new fibrous tissue is more than a radical morphologic change. It is difficult to see how a chemical transformation of the protein fibrin net into a collagenous connective tissue could be brought about, and consequently there is the possibility that the new fibrous tissue serves only temporarily as a connective tissue and is later replaced by a permanent tissue formed by a cellular action of some sort. On *a priori* grounds, however, there would appear to be no good reason for supposing that a tissue such as the new fibrous tissue, which is typical in its structure and which functions normally in wounds, would ever be replaced by another tissue.

The observation that the extent of this transformation of a fibrin-containing clot can be controlled by such purely mechanical factors as tension or pressure, so that filaments or rods of fibrin change to wavy fibrillae which unite to form heavy fibrous bundles, is not explained by the theory of the intracellular origin of connective tissue fibers. The chemist might be of assistance here in explaining the seeming contradiction of forming one kind of albuminous structure out of a totally different one. Baitsell is convinced that morphologically, at least, the fibrin net can by fusion and consolidation be converted into a fibrous tissue which in its morphologic structure, to say the least, is apparently identical with normal connective tissue of the

1. A Debated Feature of Wound Healing, editorial, THE JOURNAL A. M. A., March 17, 1917, p. 854.

2. Baitsell, G. A.: The Origin and Structure of a Fibrous Tissue Which Appears in Living Cultures of Adult Frog Tissues, Jour. Exper. Med., 1915, **21**, 455; The Origin and Structure of a Fibrous Tissue Formed in Wound Healing, ibid., 1916, **23**, 739.

3. Lambert, R. A.: On the Question of the Transformation of Fibrin into Fibrous Tissue in Tissue Culture Preparations, Proc. Soc. Exper. Biol. and Med., 1916, **14**, 5.

4. Baitsell, G. A.: A Study of the Clotting of the Plasma of Frog's Blood and the Transformation of the Clot into a Fibrous Tissue, Am. Jour. Physiol., 1917, **44**, 109.

frog. He even suggests that in response to various mechanical factors a reaction of this kind may play an important part in the formation of the connective and supporting tissues in the development of the individual. Reserving final decision, we shall await the further contributions to this important subject with interest.

THE SOLDIERS' AND SAILORS' INSURANCE LAW

What will become of the kiddies and their mother if I am killed? What will become of them and me if I am permanently disabled? As between my country and my dependent family, where does my duty lie at this stage of the present emergency? These are questions that have bothered many of the medical men and others who have responded to the call to the colors, and the absence of a satisfactory answer has prevented a considerable number from responding. The soldiers' and sailors' insurance act, passed by Congress, Oct. 6, 1917, and the regulations promulgated, October 15, under authority of that act, concerning governmental insurance, will encourage those who have already entered the service, and will doubtless impel many to enter who have been in doubt as to the line of duty.

The act guarantees to every medical officer (or in event of his death then to his wife, children and dependent mother, if there be any), certain stated compensation, during the disability of the officer, or during the dependency of the widow, children or widowed mother, as the case may be. During such disability the disabled officer will be entitled also to medical, surgical and hospital services, with necessary supplies, at government expense. And should his disability be such as to prevent him from following his profession, provision will be made for his education and training at the cost of the government in some available means of livelihood, so far as may be practicable, with the express provision that individual success in adapting oneself to such a means of livelihood shall not result in a reduction in the amount of the money compensation or in the medical care to which the disabled officer is entitled.

The protection described in the preceding paragraph belongs to every medical officer and to the dependents named, as a matter of right; but if he desires to be further fortified against disaster, he may accomplish that result through the system of governmental insurance that the act establishes. Nominally such insurance is at the expense of the insured; but as the rates of insurance are computed merely on a peace basis, the government assuming all of the added risk arising out of the war, and as the government assumes all of the expenses incident to administration of the insurance system, the insured will obtain protection at a low rate. As all policies are convertible at the close of the war, without medical examination, into insurance policies of ordinary standard types, premiums paid for protection during the war will not be lost. Ordinarily application for insurance must be made within 120 days after entering the service; but men in the service, April 6, 1917, are by the terms of the act automatically insured up to and including Feb. 12, 1918, by which date they must have applied for such insurance as they desire, in the usual manner. Application can be made, however, before the latter date, in which event the insured will have the benefit of such insurance as he may select in lieu of the standard ad interim insurance named in the act.

The existence of such compensation as the law provides in all cases of death and disability, and the possibility of greatly adding by voluntary insurance to the protection thus afforded, should materially increase the number of physicians offering themselves for military duty, and should inspire all with a keener appreciation of the fact that the government has, after all, a sympathetic understanding of the needs of its fighting forces, and may be depended on to supply such needs.

PITUITARY FUNCTIONS

Broadly speaking, there are two ways in which the possible function of glands or organs of the body can profitably be studied. One of these consists in examining the physiologic properties of extracts of the tissue under consideration from the standpoint of discovering some "active principle" or potent constituent with which its normal performance may be linked. In the case of the thyroid, for example, this plan has been partially successful. The administration of thyroid-parathyroid products can produce results in certain abnormal conditions of the organism, such as cretinism, that lead to definite convictions regarding at least some of the functions of the thyroid apparatus. However, it must be frankly admitted that the evidence regarding even the vague details of precisely what the thyroid extract therapy accomplishes in such instances is at present nothing more than a matter of conjecture. The study of the suprarenals seems to have been more successful from the standpoint of studying the potency of its constituents and its secretion into the blood. Epinephrin has established a place in physiology, pharmacology and therapy. The ablation of the suprarenal glands which produce it is followed by death. Nevertheless the recent investigations of Stewart and Rogoff[1] of Cleveland must awaken considerable doubt as to whether epinephrin itself is essential for the continuance of life.

The second method of investigation referred to consists in partial or complete removal of an organ under investigation, and observation of the effects of this procedure. This scheme has given decisive answers in

1. Is Epinephrin Indispensable for the Organism? editorial, THE JOURNAL A. M. A., July 7, 1917, p. 40.

the case of a number of structures in the body. The indispensability of the parathyroid, pancreas or suprarenals, in contrast with the spleen or salivary glands, has thus been demonstrated. By extirpation experiments, much light has also been thrown on the relation of the sex glands to the development of secondary sexual characters. Yet the apparent negative results of many ablation experiments, as found in the study of the thyroid proper and the thymus,[2] for example, tend to awaken the belief that compensatory functioning in other parts may often obscure the real contribution of specific glands to the body's physiology after their extirpation or some damage to them.

Although no single method of study has been entirely satisfactory in elucidating the complete story of glandular function, the operative removal of isolated structures has thrown a flood of light into many obscure places in physiology. Pathologic anatomy, the outcome of Nature's experiments in disease, has often supplemented the extirpation experiment or pointed the way to its meaning. All of this is brilliantly exemplified in the modern study of the pituitary body. Although some of the details of the results of experimental interference have been in dispute, the major features are at length confirmed. Following the lead of Paulesco, professor of physiology at Bucharest, who introduced the most successful method of accomplishing experimental surgical interference with the pituitary body, and of Harvey Cushing and his fellow workers in this country, Blair Bell[3] has added testimony that should help to complete the story in some of its most important aspects.

Before referring to the results of this English worker, it may be well to remind the reader that the pituitary body consists of two clearly differentiated parts which have separate modes of origin. The anterior lobe is distinctly glandular in character; the posterior lobe is developed from the nervous tissue with which it is more directly connected. There is no longer any doubt that complete loss of the pituitary body is speedily followed by death which cannot be attributed to mere shock; it is therefore an organ that is essential to life. All the investigators are now further agreed that neither partial nor complete removal of the posterior lobe causes any symptoms. The genital organs, the development of which seemed to be correlated in some way with the integrity of the pituitary, remain normal after ablation of the pars posterior, and young animals continue to develop after such an operation. Hence the secretion of the pars nervosa is, to quote Blair Bell, neither beneficial nor essential to life. Bell finds that partial removal of both anterior and posterior lobes likewise causes no symptoms, provided only a small portion of the pars anterior be removed. On the other hand, the removal of very large portions of the pars anterior is incompatible with life. Bell regards it as convincingly demonstrated now that it is the loss of this portion of the organ that proves fatal when total extirpation of the pituitary is practiced.

Cushing and his colleagues have discovered that when the anterior lobe is partially removed in young animals a condition of persistent infantilism with absence of sexual development is likely to occur. Bell has likewise noted genital atrophy under such conditions. The manifestations of dystrophia adiposogenitalis, which Cushing has described in animals after interference with the anterior lobe, could be produced by Bell in only one way, namely, by interference with or separation of the infundibular stalk. This apparently brings about a disturbance of the blood supply to the gland. As a result there is an insufficiency of the anterior lobe. The cells of this part become shrunken, atrophic and discrete—a state of affairs which, as Bell says, is always found in the human subject afflicted with the syndrome of dystrophia adiposogenitalis.

It has been held by histologic students of the pituitary that a secretion from the posterior lobe which is in close juxtaposition to the nervous tissues passes directly into the third ventricle. But Bell points out that the only real secretory cells of the posterior lobe—the cells of the pars intermedia—are derived from the same source as those of the pars anterior. Removal of the posterior pars proper does not remove true secretory cells. Separation of the stalk interferes with the blood supply of all these cells. It is henceforth necessary, says Bell, to look on the functions of the pituitary as a whole, and to consider this structure as one organ and not two. The fortuitous juxtaposition of the epithelial cells and the pars nervosa, he adds, has probably no relation to the vital functions with which the pituitary is concerned. Even if secretion from the pars nervosa does pass into the cerebrospinal fluid, as has been asserted, Bell believes there is not the slightest evidence to show that this is essential, beneficial or even the normal method by which the internal secretion is taken up by the animal economy. The blood stream is the real path for the distribution of the pituitary hormone.

Tumors in the neighborhood of the sella turcica may be imitated experimentally by the introduction of inert immobile masses. When they produce irritation, glycosuria and emaciation may result, as in the human subject. When the tumors interfere with the blood supply so as to initiate degenerative changes in the cells of the anterior lobe, they may give rise to the syndrome dystrophia adiposogenitalis. These facts now experimentally established represent a great step in advance in the elucidation of the obscure functions of a very small yet highly significant portion of tissue.

2. The Thymus and Rickets, Current Comment, THE JOURNAL A. M. A., this issue, p. 1700.

3. Bell, W. B.: Experimental Operations on the Pituitary, Quart. Jour. Physiol., 1917, **11**, 77.

URIC ACID INFARCTS IN THE NEW-BORN

The ready applicability of modern microchemical methods to the study of various types of nitrogenous compounds other than protein that circulate in the blood has at length made it possible to throw new light on a number of long debated questions regarding metabolism.[1] This now appears to be true in the case of the uric acid infarcts in the form of ammonium urates that are often found in the kidneys of the new-born during the first few days of life. That these infants excrete uric acid in unusual concentration and augmented amounts in the urine has long been known. This relatively and absolutely high output of uric acid has been correlated with associated conditions in the uric acid content of the blood by Sedgwick and Kingsbury[2] at the University of Minnesota. These investigators, as well as Slemons and Bogert[3] at the Yale Medical School, have found that the uric acid content of the blood at the conclusion of labor falls within the limits accepted as normal at other times. The figures obtained from maternal and placental circulation are identical for the uric acid in the blood of the mother and fetus. This indicates that it passes through the placenta by diffusion. In this respect, therefore, Slemons and Bogert remark, uric acid resembles other nitrogenous waste products, ammonia, urea, creatin and creatinin, which are found in equivalent amounts in both circulations. This conclusion also has the support of the findings in pathologic cases. Eclamptic mothers in whose blood the quantity of uric acid is two or three times that of the normal give birth to infants in whose blood the uric acid is correspondingly increased. Soon after birth, however, the condition changes. The content of uric acid in the blood the first three or four days after birth is higher than that of the blood of the same new-born at birth. Subsequently there is a marked decrease in this value at the end of from eight to eleven days from the value obtained (in each case with the same infant) from three to eight days earlier.

Sedgwick and Kingsbury point out that the parallelism between the high uric acid content of the blood of the new-born and the high excretion of this substance during the first three or four days of life is indirect evidence supporting the findings of Wells and Corper[4] and others (in opposition to the results of Schittenhelm and Schmidt[5]) that human fetal tissues possess no uricolytic power; for it would be difficult to imagine so great a production of uric acid if the tissues themselves possessed the power to destroy it. One naturally inquires respecting the genesis of this increment of uric acid. There is no occasion to assume a synthesis de novo, which would be contrary to all current ideas regarding the origin of uric acid. What are its purin antecedents in the new-born?

It is an attractive speculation to associate the increased presence of uric acid with a destruction of leukocytes naturally rich in purin-yielding nucleoproteins. At this period, when uric acid excretion is at its highest, rapid morphologic changes are stated to occur in the blood of the new-born. Sedgwick and Kingsbury speak of the disappearance of the nuclei of many of the red cells, the change in proportion from a predominating number of polymorphonuclear neutrophilic cells to a corresponding predominance of lymphocytes, and the striking decrease in the leukocyte count of the peripheral blood.

The existence of an undue amount of circulating uric acid soon after birth thus seems to be established. The more problematic features of the question are expressed by the Minneapolis investigators as follows: Whether the decomposition of nucleoprotein material, which must be looked on as the cause of this uric acid increase in the blood, is related to the striking changes in the blood cells, particularly in the changes in the partition of the white corpuscles taking place at this time, or to nucleoprotein destruction in other parts of the body, as yet unknown, or to both, must be left to the future to decide. These results fit in well, however, as the connecting link in the theoretical chain of early leukocytosis—fall in leukocytes—flood of uric acid in the blood—high uric acid excretion—uric acid infarcts.

1. Folin, Otto: Recent Biochemical Investigations on Blood and Urine, THE JOURNAL A. M. A., Oct. 13, 1917, p. 1209.
2. Sedgwick, J. P., and Kingsbury, F. B.: The Uric Acid Content of the Blood in the New-Born, Am. Jour. Dis. Child., August, 1917, p. 98.
3. Slemons, J. M., and Bogert, L. Jean: The Uric Acid Content of Maternal and Fetal Blood, Jour. Biol. Chem., 1917, **32**, 63.
4. Wells, H. G., and Corper, H. J.: Jour. Biol. Chem., 1909, **6**, 321.
5. Schittenhelm, A., and Schmidt, G.: Ztschr. f. exper. Path. u. Therap., 1907, **4**, 424.

Current Comment

OXALIC ACID IN FOODS

Oxalic acid is widely distributed both in the free state and in combination with bases throughout the plant kingdom. As a result, oxalic acid is introduced into the body as a constituent of vegetable foods. The quantities thus involved are in general exceedingly small and are, so far as is known, physiologically harmless. The acid doubtless occurs in many instances as calcium oxalate in the alimentary tract and escapes absorption. Only in a few plants does the content of oxalic acid reach more significant proportions. Recently attention was called, however, to unexpected fatalities occasioned by eating the leaves of rhubarb in place of spinach. Although the chance for such experiences is doubtless extremely limited on account of the food habits of civilized peoples, it is nevertheless desirable to know something more detailed about the distribution of oxalic acid so that every possibility of harm may be averted. In these days when new foods and unusual sources of nutriment are being urged on housewives by enthusiasts eager to promote the conservation propaganda, one may conceive not only of the chance of employing a product with an unexpectedly high content of oxalic acid, but also of a

possible augmented content of the toxic substance by the chance use at the same time of several products containing small amounts. Recent analyses by Arbenz[1] which have become available in this country give the following statistics, in terms of oxalic acid per kilogram of air dry spice or ready-to-eat vegetable, respectively: black tea 14.3, cocoa 4.8, pepper 4.5, rhubarb 3.2, spinach 2.9, sorrel 2.7, dry figs 1.2, roasted coffee 0.8, roasted chicory 0.7, raspberries 0.5, beans 0.45, potatoes 0.4, beets 0.3, currants 0.3, pears 0.2, bilberries 0.2, oranges 0.1, asparagus 0.09, cherries (with seeds), tomatoes and wine grapes 0.08, rutabagas 0.07, cauliflower 0.06, onions 0.05, Brussels sprouts 0.04, endive and melons 0.03, mushrooms, peaches, flour, lemons, celery, plums and apples, a trace; corn meal, rice and chestnuts, none. An added value of these figures lies in the fact that since oxalates in the urine are in part derived from the dietary oxalic acid which is resistant to oxidation in the body, in cases of oxaluria, physicians are accustomed to prohibit those foods which contain most oxalic acid and which are eaten in sufficient abundance to make the total amount thus ingested worth considering. Ordinarily the proscribed dietary articles include tea, coffee, cocoa, spinach, rhubarb, sorrel, pepper, beetroot and beans.[2] It should be borne in mind, however, that not all of the excreted oxalate is necessarily associated with a food source. Some of it may have a microbiotic origin in the alimentary tract; and its possible genesis through imperfect metabolism of certain organic acids is still debated.

THE THYMUS AND RICKETS

It is practically useless to turn to the textbooks for helpful information regarding the functions of the thymus. At best one will find a series of unverified conjectures, debated assumptions, or a frank statement of our ignorance of the real purpose of this organ. The natural association of the thymus with early life has led to the conjecture that the gland plays a part in growth; for it becomes smaller and smaller as the rate of growth declines. The latest though by no means the final evidence indicates that former statements implicating a retardation of growth after removal of the thymus cannot be substantiated by experiment. Halnan and Marshall,[3] for example, found that extirpation of the gland from young animals had no effect on their growth, even when the testes were removed simultaneously. Furthermore, in observations on castrated animals they could find no evidence of any compensatory mechanism between the testes and the thymus. In recent years another possibility of decided practical importance has been given some attention through the assertions of continental investigators.[4] They have reported changes after experimental thymusectomy that correspond somewhat closely to those observed in rickets; and thus the question of the relation of the thymus to bony growth and its pathologic manifestations is again brought into prominence. In an investigation conducted at the Physiology Department of Glasgow University under the new national health insurance medical research scheme, Renton and Robertson[5] have come to a seemingly convincing conclusion in this matter. They have removed the whole thymus successfully in a series of animals which survived long enough to permit adequate observations on their growth in comparison with suitable control animals. Renton and Robertson conclude that thymusectomy of itself does not appear to cause any symptoms. Spontaneous rickets in subjects not operated on gives rise to essentially the same symptoms as the European writers have attributed to removal of the organ; that is, thymusectomy does not make young animals more susceptible to spontaneous rickets, and if they develop it, they do so at the same time and in the same manner as control subjects. The British investigators sum up their findings by the decision that removal of the thymus cannot be held responsible for the onset of rickets or similar bony changes. The alleged pathologic manifestations that have been credited to loss of the thymus have in reality presumably been due to the development of spontaneous rickets in young animals. Thus another promise of discovering a function for this organ has been shattered.

THE RELATIVE VALUE OF FRUIT JUICES

Fruit juices are rapidly finding their way into the daily life of the American people. A few years ago they were limited to the delicacies of the home or to syrups of the soda fountains. Today orange juice and grape juice in particular have found a widespread and growing popularity as agreeable beverages. It is scarcely an exaggeration to say, as does one of the large manufacturing companies in advertising its product, that grape juice has become the national drink. The temperance wave that has swept over this country, taken in conjunction with a vigorous and highly effective advertising campaign on the part of various producers, has helped to secure favor for a refreshing and wholesome beverage. The shortage of sugar at present and the prospect of a necessary restriction in the output of syrups and similar "essentials" of the "soft-drink" industry are likely to increase still further the use of palatable fruit juices. In addition to organic acids which lend a tart flavor to them, these beverages, provided directly by nature, contain a considerable portion of sugars which lend a food value to the product. Thus a glassful of grape juice measuring 7 ounces (210 c.c.) will furnish about 200 calories in the form of sugar; and orange juice is about half as rich in food value. Recently the juice of the loganberry has begun to claim recognition in this category. Analyses[6] made at the Oregon State Agricultural College at Corvallis indicate that this fluid likewise con-

1. Arbenz, E.: The Quantitative Determination of Oxalic Acid in Foods and Condiments, Chem. Abstracts, 1917, **11**, 2374.
2. See, for example, Tibbles, W.: Dietetics, or Food in Health and Disease, Philadelphia, 1914, p. 76.
3. Halnan, E. T., and Marshall, F. W. A.: On the Relation Between the Thymus and the Generative Organs, and the Influence of these Organs on Growth, Proc. Roy. Soc. London (B), 1914, **88**, 68.
4. Klose and Vogt: Klinik und Biologie der Thymusdrüse, 1910. Matti: Ergebn. d. inn. Med. u. Kinderh., 1913, **10**.
5. Renton, J. M., and Robertson, Madge E.: Thymusectomy and Its Relationship to Rickets, Jour. Path. and Bacteriol., 1916, **21**, 1.
6. Daughters, M. R.: The Composition of Loganberry Juice and Pulp, Jour. Indust. and Engin. Chem., 1917, **9**, 1043.

tains from 6 to 8 per cent. of sugar in the acid juice. This lends to it a fuel value of approximately 300 calories to the liter, presumably in the form of available carbohydrates.

HOOKWORM IN THE MINES OF CHINA

The danger of hookworm infection in mines is well known. Hookworm disease is prevalent in many of the mines of California, China, France, Hungary, Sicily, South America and Spain. Germany, it is said, has spent over $2,500,000 in direct outlay to control hookworm infection in a few of its mines. The disease has been brought under reasonable control in the mines of Belgium and Wales. The investigations of the International Health Board of the Rockefeller Foundation have brought to light a rather unexpected source of perennial reinfection of mines that applies to China in a way scarcely realized in the other countries mentioned. As stated recently in THE JOURNAL,[1] the hookworm problem in China presents unique features because of the widespread employment of human excrement as a fertilizer. The disease is thus easily spread into the agricultural districts. It happens that more than a hundred thousand miners, largely recruited from farmers who have worked barefoot in the moist, larva-infected soil, are employed in the mines of Hunan Province alone. The cooperation of the International Health Board has been solicited to provide measures for the control of a difficult situation brought about by this unusual combination of circumstances.

HEAT LOSS AND WATER ECONOMY IN THE BODY

In 1614, Sanctorius wrote, "He only who knows how much and when the body does more or less insensibly perspire will be able to discern when or what is to be added or taken away either for the recovery or preservation of health."[2] Yet the story of this factor of insensible perspiration, the amount of water lost from the body in vaporization, has been most inadequately written. The part played by water in the body is ordinarily overlooked by the clinician except so far as it is expressed in the volume of the urine or in the genesis of an edematous condition. The water which acts as a solvent for the body's waste may thus, perchance, be taken into consideration; but of the water lost from the organism through the respiratory passage and the skin and its rôle in the dissipation of heat from the body, little is known and less is mentioned. The pathway for the loss of heat naturally varies with the temperature of the surrounding air. At a low temperature there is little evaporation of water. Heat is lost in other ways. At an environmental temperature as high as that of the body or exceeding it, there can be no loss of heat by conduction and radiation, so that water evaporation must remove the whole of it. The study of a large number of persons in respiration calorimeters, in this country in particular, has furnished data for estimating some of the factors just referred to.[3] Under an average environmental condition with medium humidity, normal men from 20 to 50 years old excrete on an average 29 gm. (1 ounce) of water an hour — about 700 gm. a day — through the skin and the air passages. In this manner approximately one quarter of the total heat produced is eliminated. Few normal men exhibit variations of more than one-tenth from this figure. According to Soderstrom and Du Bois,[3] the output of water as insensible perspiration is very little affected in disease. When the heat production is increased, the body responds and dissipates the usual percentage of calories in the vaporization of water. When it is necessary to get rid of unusual amounts of heat, the percentage lost in vaporization is increased. Edema seems to have no effect on the water output through the skin; and cardiac and nephritic patients on the whole give figures close to the normal. Just as there is little realization of the extent of the "invisible" water output, so there is too often a failure to appreciate and a tendency to neglect the water content of the intake in the form of seemingly solid food. An illustrative instance has been cited by Soderstrom and Du Bois in the following meal, which might well be given to a nephritic patient: a small dish of farina, a boiled potato, a portion of tomato and lettuce salad, a small dish of junket, and an apple. This ration contains something more than 23 ounces (690 gm.) of water, a quantity sufficient to carry away the heat that leaves in "insensible perspiration" in the ordinary person.

1. Problems in the Campaign Against the Hookworm, editorial, THE JOURNAL A. M. A., Nov. 10, 1917, p. 1611.
2. Sanctorius: De medicina statica aphorismi, Venice, 1614, Aphorism III, translated by Lusk, Graham: The Elements of the Science of Nutrition, Philadelphia, 1917, p. 18.
3. The literature is reviewed by Soderstrom, G. F., and Du Bois, E. F.: Clinical Calorimetry, Twenty-Fifth Paper, The Water Elimination Through Skin and Respiratory Passages in Health and Disease, Arch. Int. Med., May, 1917, p. 931, from which some of the facts quoted are taken.

Health of Food Handlers.—During the examination of the food handlers of New York City, made through the cooperation of the health department and the American Museum of Safety, which included the examination of 44,042 individuals examined at the Occupational Clinic and 33,000 by private physicians, Dr. Louis I. Harris and Mr. Dublin of the Metropolitan Life Insurance Company made an intensive examination of 1,748 food handlers considered typical of the entire number. These included waiters, waitresses, cooks, male and female, other kitchen employees and bakers. In the entire group there were ten cases of active tuberculosis, twelve of suspected and three of arrested tuberculosis. Forty-one persons gave evidence of active or suspected syphilis, of which thirty-seven were among waiters. This group furnished forty-six persons with flatfeet and an equal number with varicose veins. Among the 211 waitresses examined, 65.8 per cent. showed anemia; 62 per cent. had varicose veins, and 17.1 per cent. were reported as suffering from some form of menstrual disorder. Four waitresses were found to have syphilis. The predominating defect among cooks was organic heart disease, there being thirty-two who showed cardiac disease. Of the cooks, 161 had marked disturbance of the digestive functions. Among bakers no tuberculosis or active syphilis was found, but there were thirty-eight cases of chronic bronchial conditions; thirty had organic heart disease and thirty-three, anemia. The study is valuable as demonstrating the importance of the examination of food handlers both from the standpoint of protection of the health of the community and for the opportunity it offers for the study of occupational groups. Another point brought out in the course of this study is the lack of uniformity of standards and methods of classification used by the various workers in the field of industrial hygiene.

Medical Mobilization and the War

MEDICAL OFFICERS IN ACTIVE SERVICE

At the present time there are approximately 12,500 medical men in active service. This includes Medical Corps officers (a little less than 550), medical officers of the National Guard Army, and officers of the Medical Reserve Corps. Up to date approximately 17,900 physicians have been recommended for commission in the Medical Reserve Corps.

AMERICAN WOMEN'S WAR HOSPITALS UNIT

The American Women's Hospitals, of which Dr. Rosalie Slaughter Morton is chairman, was organized by the War Service Committee of the Medical Women's National Association of the United States. Women physicians to the number of 1,200 have registered with the committee, for home and foreign service. Already a number of physicians have been sent abroad to work under the authority of the American National Red Cross with which the American Women's Hospitals works in close cooperation.

MEDICAL OFFICERS' TRAINING CAMP AT FORT BENJAMIN HARRISON TO BE DISCONTINUED

The Medical Officers' Training Camp at Fort Benjamin Harrison is being discontinued and the medical officers transferred from the training camp to other stations. Those who have not yet completed their instruction go to the training camp at Camp Greenleaf, Fort Oglethorpe. Orders have been issued from the Surgeon-General's Office, assigning Colonel Ashburn and several of the other instructors to the Surgeon-General's Office and distributing the remaining instructors among the other training camps. The ambulance and field hospital units undergoing training at the training camp are now testing their ability for sustained marching.

Ambulance Companies Nos. 15 and 17, with one field hospital unit and headquarters, all of which are motorized, were ordered to start on November 9 on a seven-day hike to Georgia. Company No. 17 and the headquarters unit will go to Camp Greenleaf, while the other unit will go to Camp Oglethorpe. At the same time, two ambulance companies and two field hospitals, the sixth and fourteenth in each case, provided with mule motive power, received similar instructions.

SALVAGING CLOTHES FROM BATTLE-FIELDS AND CAMPS

The English War Office has set up at Dewsbury a department for the purpose of repairing, restoring and utilizing old uniforms and fabrics recovered from the army and navy. All discarded clothing and fabrics of every sort from the battlefields and camps and from the navy are collected, put into bags and shipped to Dewsbury, where the material is sorted into that which can be cleaned, repaired and made usable, and that which must be discarded as rags and put through processes by which it can be made useful as new material. As many as ninety truckloads of this material have been received at this station in a single day. About 350 women are employed as sorters, who pick out the garments that are in condition to be repaired and used again. All articles capable of being restored are sent to a local firm of dyers and cleaners, by whom they are cleaned. Then they are repaired and reissued to the troops or for the use of German prisoners of war. With a high standard of efficiency and a large turnover, the cost for each article, including large repairs, amounts to about 28 cents. In this way, it is said in the report regarding this matter from U. S. Vice Consul Hamilton C. Claiborne, Bradford (*Commerce Reports*, November 5) that $300,000 worth of uniforms have been salved up to the present. In ten months, a total value of material received and disposed of at Dewsbury was over $3,000,000, and the net profit shown on such material at all the stations amounts to a very large sum. Details are given in the report of the amount of material received, the various channels in which it is disposed of, and the uses to which it is put.

CALIFORNIA'S VENEREAL DISEASE PROGRAM

Last summer there was held in San Francisco a conference on prevention of venereal diseases in California, in the interest of soldiers, sailors, and civilians. The program then outlined has been embodied in regulations recently by the state board of health.

The regulations for the prevention of syphilis and gonorrhea require those in attendance on a case of either of these diseases, or a suspected case, to report the case immediately to the local health officer, who in turn will report it to the state board of health. Such reports are to be made by patient's office number or initial only, but the number or initial used must refer definitely to the physician's record of the case. Physicians are expected to furnish, when reporting such cases, any available data that may be useful regarding the sources of infection and must teach the patient how to prevent the spread of the disease, its seriousness, the necessity for prolonged treatment, and must furnish the patient with approved literature on the subject.

Every city, county, and other health officer is directed to use every available means to ascertain the existence of syphilis and gonorrhea within his jurisdiction. He is required to investigate immediately all reported or suspected cases of syphilis in the infective stage, and of gonorrhea, and may inspect, examine, isolate, and disinfect persons, places and things. He is directed to make examinations of persons reasonably suspected of having syphilis in the infective stage or gonorrhea All prostitutes are to be regarded as coming within the suspected class, but the health officer is forbidden from issuing to such women certificates of freedom from venereal disease. The health officer may require the submission of specimens from cases or suspected cases of syphilis or gonorrhea, for the purpose of examination at a state or municipal laboratory, and it is the duty of the attending physician to furnish such specimens when called on to do so.

Local health officers are directed to isolate reasonably suspected persons whenever isolation is necessary to protect the public health. In establishing isolation the health officer must define the limits of the area within which the isolated person and his immediate attendant shall remain. Isolation is not to be terminated until the patient has become noninfective, unless permission is given by the state board of health or the secretary of that board. Cases of gonococcus infection are to be regarded as infective until at least two successive smears taken not less than forty-eight hours apart fail to show gonococci. Cases of syphilis are to be regarded as infective until all lesions of the skin and mucous membrane are completely healed.

Health officers are directed to use every proper means of repressing prostitution, and are to report to the Bureau of Venereal Diseases any unusual prevalence of syphilis or gonorrhea and any unusual local conditions tending to favor the spread of these diseases.

CLINICS AND HOSPITALS

In preparing a list of approved venereal disease clinics and hospitals, the state board of health is aiming to raise the standards of some of the existing dispensaries and hospitals, to encourage the formation of additional public dispensaries where needed, and to assist persons needing institutional treatment to ascertain which institutions have adequate staffs, equipment and standards. Minimum standards are prescribed for dispensaries and for hospitals.

A dispensary, to be approved for the treatment of syphilis, must treat patients suffering from that disease in a separate department or in the department of dermatology, but there is no analogous restriction with respect to dispensaries for the treatment of gonorrhea. In either case, however, the dispensary must be open at least three times a week, day or evening, and the staff must be adequate both in number and in training. Rooms must be well arranged, and every dispensary must have at its disposal beds for isolation and treatment. Laboratory facilities and equipment, with instruments and apparatus, must be provided. In cases of syphilis, microscopic examinations of the suspected initial lesions must be made; Wassermann tests must be performed in the dispensary laboratory or other approved laboratory, and suitable tests and observations shall be made of all patients for a period of not less than two years after the conclusion of adequate treatment. Salvarsan or an accepted equivalent must be administered to all patients suffering from syphilis, unless there are contraindications.

In an approved dispensary for gonorrhea, systematic examination must be made of the discharges, and facilities for urethroscopic and cystoscopic examinations must be pro-

vided and be regularly employed by the attending clinicians. Patients must not be discharged as cured until after repeated negative clinical and microscopic examinations. Adequate facilities must be provided for asepsis and antisepsis.

In dispensaries of both kinds adequate records must be kept and an annual report must be made. The clinicians in attendance must themselves devote the amount of time necessary for intelligently informing new patients of the seriousness of their diseases, the necessity for treatment until cured, and the precautions to be taken to prevent the spread of the infection to others, and in addition the dispensary must furnish approved literature on the subjects. A dispensary will not be approved unless a social service department is maintained and adequate measures adopted to procure the regular attendance of patients. If it becomes necessary for any reason to discharge a patient still uncured, the patient must be referred to an approved clinic or to a reputable physician

In general the standards for hospitals for syphilis and gonorrhea are similar to those for dispensaries, but it is specifically provided that patients having venereal diseases must be accepted under the same conditions as other patients.

NEWS OF THE TRAINING CAMPS

At Fort Oglethorpe

Lieutenant McDonald of the Signal Corps has been detailed by the War Department to make a series of moving pictures of the work being done at Camp Greenleaf toward training civilian doctors for military work. If there are any physicians left in this country who imagine that all they have to do in order to serve in the Medical Corps is to change their civilian clothes for a uniform and begin "pushing pills" to the sick soldier, please advise them to see these pictures if they are ever exhibited in their communities. Let them see the workings of an ambulance company, field hospital, regimental or sanitary unit, and then wonder whether they could take charge and run one as smoothly as the trained man. Surprising as it may be to them, doctors are in charge of these outfits, have to run them, and are responsible for all properties connected with them, as well as the training of the enlisted personnel. Moreover, these doctors were untrained civilian surgeons or physicians four months ago.

Majors Van Wart and Owensby have been making a mental survey of the camp for the past three weeks.

Major L. Owen has been relieved from duty at Camp Greenleaf and assigned to the Surgeon-General's Office. The camp has suffered a distinct loss, for Major Owen was one of our most popular and efficient instructors.

Lieutenant-Colonel Talbott, M. C., has been assigned to Greenleaf as camp inspector. Colonel Talbott has had many years' experience in this line of work, and from the amount of interest he has inspired in the student body, we feel safe in predicting "more laurels for his crown."

Major William Pepper, M. R. C., formerly dean of the Medical Department of the University of Pennsylvania, has been made adjutant.

Major Alexander Abbott, M. R. C., has been placed in charge of the school of hygiene recently established at the camp.

Major Walter Weisser has been assigned as provisional director of field hospitals.

Major Bell, formerly connected with the Royal Army Corps, has given a series of lectures on his work in France. Major Bell's ability as a speaker and his unusual opportunities for observing the medical work done in France made his lectures the most interesting in the course.

The Camp Greenleaf Military Society was organized last Friday night. Col. Henry Page, M. C., the commandant, was elected honorary president, and Major Alexander Abbott, president. The aims, objects, etc., of this society are worthy of a more lengthy notice than can be given in this letter—so more about it another time.

Everything is being made ready for taking over the work of the M. O. T. C. at Forts Riley and Benjamin Harrison. The buildings of the R. O. T. C. will be turned over on November 27, which will give accommodations for an additional 5,000 men.

Lieutenant-Colonel Carswell has been relieved from duty with the field hospitals and ordered to San Antonio, Texas. Before leaving, Colonel Carswell was presented with a beautiful wrist-watch by the officers in his command, as a token of their appreciation of his untiring efforts in making the field hospitals one of the best outfits in the country.

Major M. Ashford, M. C., is convalescent from an attack of the grip, and has resumed command of the ambulance companies.

At Fort Benjamin Harrison

CLOSING OF THE CAMP

What is left of the members of the medical officers' training camp at this post will continue their training at Fort Oglethorpe, Ga., as the date for closing the camp here is at hand. The thousands of medical officers who have gone through the training at Fort Benjamin Harrison since the first of June are scattered far and wide. Most of them are still in this country, assigned to base hospitals, field hospitals and regiments. Not a few are in France or at embarkation points.

It is gratifying to the pride of the medical profession for the War Department to admit that the medical branch of the service is prepared to the highest point of efficiency of all. True, it was not necessary to teach us the most obvious part of our work—that of medicine and surgery—as none could receive commissions without first undergoing examination or furnishing evidence of a thorough medical education. However, it has been necessary to begin at the bottom in the education along military lines. Very few had any knowledge whatever of the military side of the life which it bids fair to believe will be theirs for three or four years. This they had to learn, and it has been accomplished in a remarkably short space of time.

GAS DEFENSE

The last of the military lessons, and perhaps one of the most interesting that has been introduced, is that latest flower of Kultur, the gas squad, the Legion of Frightfulness, its insignia a skunk with tail rampant, bar sinister, and the motto "Ad Nauseam."

Insignia of the Legion of Frightfulness.

Three instructors, a trio of frightfulness, descended as a gas cyclone from Fort Sill, Okla. With them arrived an assignment of the gas masks adopted by the United States Army for protection against the poisonous and other gases being used in the present war.

Poison gas was first used in modern warfare, April 22, 1915, by the Germans against a sector of fresh Canadian and French forces, with the double purpose of destroying the morale of the fresh contingents and causing casualties. This was followed by a fresh trial, defensive, against the French attack on the 26th, which was likewise successful. Its use soon became general. This was cloud gas, and as its efficacy depended definitely on atmospheric conditions, gas shells soon were substituted, and now constitute 30 per cent. of the shells used.

The objects in the use of gas are: (1) putting men out of action (casualties); (2) hampering men in artillery, delaying maneuvers; (3) preventing supports and supplies from being brought up, and (4) inspiring general terror.

The gas is used in the form of cloud gas and gas shells in the following varieties:

1. Lacrimatory—direct primary effect on the eyes.
2. Asphyxiating—direct corrosive and irritating action on the respiratory tree.
3. Paralysant—causing central nerve paralysis.
4. Miscellaneous—nauseating and blistering compounds.
5. Accidental—nitrous fumes and carbon monoxid from explosion of mines and high explosives.
6. Mixed.

To combat gas attacks, gas masks and warning are employed. The masks are box respirators of a regulation type. They consist of a canister containing layers of cotton, filters, charcoal, a neutralizing agent—soda lime—and an expiratory shutter valve. Masks are provided with mouthpieces, nose-clip and goggles, fastened into rubber tissue, to protect against tear gases. Warnings come from various sources—aeroplanes and outposts, the whistling sound of the gas itself, which can be heard for 200 yards, smell, the

appearance of a cloud of any color, and the loss of the taste of tobacco.

As there is short time allowed to don the mask when in action, drills to speed up its adjustment must be given.

GAS DRILL

There are three preliminary commands: 1. "Mask at carry." Here the satchel is swung over the left hip, with the sling passing over the right shoulder. 2. "Gas alert." The satchel is advanced to the front of the body, with both arms through the sling, and flap open. 3. "Gas" by numbers (adjustment of mask): 1. The right hand is thrust into the satchel and the mask seized firmly, the tube fitting into the palm of the hand, with the fingers grasping the eye-piece. 2. The mask is brought smartly from the satchel, with the fingers grasping the edge of the face-piece, and is brought close to the chin, which is thrust forward. 3. The mask is brought upward, the chin dug into it, and at the same time the elastic bands are placed over the back of the head. 4. The metal breathing tube is seized in the right hand, and the rubber mouth-piece is placed in the mouth. 5. The nose-clip is attached well down over the nostrils. (This is necessary to prevent nose-breathing, as all of the air taken into the lungs must come through the canister containing the antidotes.)

This drill is continued to a point of efficiency whereby it is possible to adjust the masks from "Masks at carry" to the finishing touch of fastening on the nose-clip, in six seconds.

For the purpose of this drill the innocent Docs are ruthlessly lined up, preparedly gassed by lectures, and then forced to don their masks. One look, and there is a mad rush for cameras, to perpetuate their first appearance in the gas masks. That night 300 letters go home, telling of the marvelous experiences and hair-breadth escapes from the gas clouds—shell gas and lecture gas.

As a lesson in anatomy, the gas drill is excellent, and many learn for the first time, while adjusting the nose-clip, the exact position of their noses. The masks also demonstrate that drooling is not exclusively an attribute of infancy, and that bibs may be used to advantage even by medical officers. The constant irritation to the mouth of the tight-fitting mouth-piece fastened to the end of the breathing tube causes an excessive flow of saliva, which escapes through a drip tube out on the chest. It is not an uncommon experience at the beginning of this work, and until one is accustomed to the mouth-piece, for the flow of saliva to be so great as to soak through the clothing.

The first sensation of uneasiness over, and the novelty past, all found to their surprise that the mask, although grotesque in appearance and somewhat clumsy, could be worn without discomfort, and that it permitted perfect freedom in breathing.

This course of instruction, patterned after the British organization, occupies a week, divided between lectures, drills and demonstrations with actual gases at the gas house. It is intended to cover the subject thoroughly and to show the method of protection against poison gases, describe and demonstrate the kind of gases used, and, in the Medical Corps, to give information regarding the symptoms and treatment of those unfortunate victims of this terrible phase of modern warfare.

News Notes from Fort Riley

Preparations for winter are now in progress. Barracks are being banked with earth or supplied with frame or stone underpinning. Stoves have been installed in all barracks and mess halls. Following the blizzards and cold snap of last week, we have had nearly a week of ideal Indian summer weather. Warm, mild sunshiny days and cool, pleasant nights make ideal weather for field maneuvers and bivouacs.

The remnants of Companies 5, 6, 7, 8 and 9 have been consolidated into one company and transferred to No. 6 barracks. This combination is known locally as the "scrambled eggs company," although its own members prefer the title of "Rainbow Company."

No. 7 Mess Hall has been converted into an officers' reading room and library. It is furnished with stoves, tables and chairs, and forms an ideal place for study, reading and letter writing. Medical journals, popular magazines and books are plentifully supplied. This room is generally patronized, and fills a long felt want in the camp.

On Thursday and Friday of last week, companies were taken in a practice march and bivouac to Hay Camp Springs, each man carrying his full equipment with the exception of his bedding roll. The boys supplemented the regulation field reserve ration with rabbit stew, thus furnishing a practical illustration of living on the country.

Field tactics in the morning and regimental maneuvers in the afternoon have given Companies 8 and 9 abundant practice in equitation, on some days giving an opportunity for six or seven hours a day on horseback. Each student officer, in turn, acts as a regimental surgeon, brigade and division surgeon, and is required to issue his orders and carry out his plans. Instruction and practice in locating regimental aid stations, ambulance dressing stations and field hospitals have been greatly enjoyed, the terrain of the Fort Riley reservation affording unusual opportunities for such work.

Major K. W. Kinnard, M. C., U. S. Army, has been ordered to the medical officers' training camp from Camp Sherman, Chillicothe, Ohio, to act as director of field hospitals.

Major George G. Davis, M. R. C., of Chicago, has been relieved as director of field hospitals and assigned to the command of Evacuation Hospital No. 1.

BIVOUAC PRACTICE

One of the things much looked forward to by those men who really enjoy outdoors is the practice march and bivouac. The company, each man equipped with his shelter half, rope and pins, haversack and canteen and carrying the standard reserve ration, is marched out to Hay Camp Springs, which is a delightful place for a bivouac. The pup tents are pitched on each side of the company street, and then the tents, as well as the officers' personal belongings, are carefully inspected by the officer in charge of the party. To accustom the officers to the use of the Lyster bag, no water is permitted to be used until it has been properly chlorinated in the bags, although the water at the springs is of the best. The reserve ration alone is permitted, and no extra food or delicacy of any kind may be taken. Each officer cooks for himself; and the bacon, crisply fried in the meat can, never tastes better than when on such an expedition. The bread comes in two packages, and is in the form of a cracker. Without butter these crackers would be unpalatable indeed; but after being dipped into hot water (heated in the cup going with the canteen) and then mixed thoroughly with the melted bacon fat, they form quite a savory dish. Coffee is made, and completes the menu. While bacon, hardtack and coffee with sugar but without milk may sound to the uninitiated an insufficient meal, it is far from being such. The caloric value is amply sufficient for a heavy man doing heavy work.

To make oneself comfortable in a pup tent requires, first, that one be thoroughly tired, and second, that one be not too badly coddled by the refinements of civilization. The average officer sleeps well, albeit, if the night is cold, it may be an effort to keep warm. Blessed is he whose tentmate does not snore; for with two men in a space as small as that encompassed by a shelter tent, the relation of one to the other is much like that of a pair of spoons in a case. For breakfast, more reserve ration, for luncheon ditto. Cleaning the dishes is not an extensive process, but one that would put the average housewife to her wit's end. Yet with some time and much rubbing, it can be done and done satisfactorily too.

The allowance of equipment taken on the wagons is 50 pounds, which includes absolutely everything. To make sure no one "hunches," the rolls are weighed.

Company 8 in its bivouac had a rabbit hunt. Forming a circle, they managed to scare up and kill some score or so of rabbits, which were promptly transformed into savory stew. The next day's march home finds each officer with a new idea as to just what a bivouac means and how it feels to be on the reserve ration.

NEWS OF THE CANTONMENTS

Twenty-Eighth Division, Camp Hancock, Augusta, Ga.

Representatives from the Surgeon-General's Office recently visited the camp to inquire into the shortage of equipment.

Major Dillinger recently returned from a short leave of absence. He is assistant division surgeon. He has been active in Pittsburgh politics, and was recently a candidate for councilman.

A course of intensive training for the medical officers was begun here, November 1. Among the lecturers are Lieutenant-Colonels Keller and Crookston, Majors Frescoln, Heffelbower, Crampton, Schaeffer, Dillinger, Swayne, Hogan and Schwartz, Captain Stone and Lieutenants Wood, Smith, Laws, Snyder, Seeley, Hollister and others. The course will include the modern advances in military surgery, trench sanitation, French and antigas warfare.

Thirty-First Division, Camp Wheeler, Macon, Ga.

BASE HOSPITAL NOTES

There are at present under treatment in the hospital 1,322 patients, although three wards are still incomplete. Three fourths of the patients have measles, and unless there is an abatement of the epidemic, it will be necessary to occupy the hospital tents pitched for use in case of need. Six tents, each with a capacity of twenty-five patients, are in place, and will be used for convalescent measles patients only should the emergency arise. Heretofore it has been possible to care for all patients under roofs, though all porches and the machine shop have been utilized to that end.

Notwithstanding the crowded condition of the wards, the patients are content, and there are few complaints. When these are made they are at once investigated thoroughly, and relief given as indicated.

The mortality rate speaks for itself, and shows conclusively that even under great difficulties sick and wounded men can be handled satisfactorily. As sequelae there have been nineteen cases of pneumonia, with two deaths.

It should be gratifying to the profession to know that practically every one, from the commanding officer to the lowest private, has risen to the occasion of this emergency; but it is no more than is to be expected. Conditions arise in war which must be overcome, and they are overcome.

The enlisted personnel has been increased by eighty men arriving from Camp Lee. It is believed that there are now enough.

The nurses' quarters are nearing completion, and will be ready for occupancy in a few days, as will the isolation and neuropsychiatric wards. It will probably be necessary to use the latter two for measles patients for the time being.

The mess officer and kitchen personnel are accomplishing the almost impossible task of feeding 1,700 people with a mess hall and equipment intended for 500.

PERSONAL

Captain Pratt has begun his course of instruction in gas defense, which is extremely interesting.

Major Harrold, M. C., acted as one of the judges in the athletic competition at the Georgia state fair.

The Georgia branch of the Daughters of the American Revolution intends to present an ambulance to the Thirty-First Division, for service in France.

Major Pearce Bailey, chief of the neurologic division of the medical service, visited that division last week.

Captain Mitchel, Sanitary Corps, is now on duty with the division as sanitary engineer.

ONE HUNDRED AND SIXTH SANITARY TRAIN

Recently a short problem was workeed out west of the Marion road, 2 miles north of the base hospital site. The tag-patients were detailed from the Florida and Alabama field hospital companies. Work of the regimental detachment was carried out by the hospital corps detachment of the One Hundred and Twenty-Second Infantry, commanded by Major Lindrome. The dressing station was established and the wounded evacuated to the ambulance company dressing station from the regimental collecting point by Ambulance Company No. 121, Capt. Robert F. Ashworth commanding. From the dressing station the wounded were evacuated by the motor ambulances to a theoretical field hospital established at Section 19. Considerable improvement was noted in development of coordinated effort over the problem of last week.

The ambulances of Ambulance Company 124 (mule-drawn) are in process of receiving their initial coat of olive-drab paint, showing in striking contrast to the familiar dark painted bodies.

Additional details of thirty-five men were made for special duty at the base hospital the past week in order to meet the increased demands of the heavy work incumbent on the base hospital. Though further depleting the enlisted personnel available for routine drill and instruction purpose within the train, it is evident that the training received in the actual care of the sick will be of great value in the future work of the train.

Major Cornelius F. Holton, commanding Field Hospital 123 (Georgia), by direction of the division surgeon has pitched the complete ward-tent equipment on the base hospital grounds for use should the emergency require.

Lieut. Daniel P. Campbell has returned from his short leave of absence a happy benedict. Mrs. Campbell has taken up her residence in Macon.

It is with deep regret that we note our first casualty in the train in the death of Private Aubrey Moore of Ambulance Company No. 123, a young man of sterling quality, with great promise of soldierly development. In attending the sick in one of our detailed detachments at the base hospital, he contracted lobar pneumonia. Even as on the field of battle, "he died in line of duty."

The sick rate of the sanitary train reflects credit on the officers and men of the train, being the lowest of any organization in the division.

Again the hopes of the train commander, Major Keenan of Massachusetts, have been raised in the anticipation of the carrying out of the promise of a dinner of "possum and 'taters." As reported two weeks ago, the prospective dinner was stolen from his cage. However, Friday morning a fine fat subject of the possum tribe arrived from some unknown source, and at the present writing we are sure, at least, that said possum is deceased and ready for the oven. Massachusetts still has hope of being convinced that this famous dinner combination is what is claimed for it.

The weekly social of the officers and ladies of the train, with their guests, was held as usual in the recreation hall. The Florida field hospital orchestra furnished the music for dancing. The usual buffet luncheon was served.

The completion of the framing of the tents for cool weather has insured more comfortable quarters. The acquisition of considerable more clothing now renders comparative comfort, especially at night.

Major Job C. Patterson, director of field hospitals, visited last Sunday at the neighboring settlement of Columbus. We have no definite information, but we suspect that a young man's thoughts may turn "lightly to love" even though spring is several months away.

Thirty-Fourth Division, Camp Cody, Deming, N. M.

Enlisted men of the division already present number about 23,000. During the past two weeks the number has been rapidly increasing. The camp is a collection of human beings of wonderfully good quality, and life in it induces a daily growing respect for the man power of America. These men, from our middle western plains, are a bulwark of defense on which the nation may confidently rely.

The spirit of the camp is excellent. It is well expressed in an address delivered by Brigadier-General Mauldin in command of the division on the occasion of the opening of the School for Medical Officers. He said:

> We face an enemy capable and determined, and the task before us will require the best that each man in our Army has in him. But the Army has already accomplished things that seemed impossible. In this war the Medical Department faces the greatest demand that has ever yet been made on the medical profession. The response has been good. Men have made great sacrifices in order to serve the nation, and these sacrifices are appreciated. Our medical officers are ready to work all the time with all their capacity. More than that is required. We must work together. Cooperation with each other and with the rest of the Army is essential if we are to meet the new and unconsidered duties by which we shall be confronted in the war, and win. But we know that each man will give his utmost effort to the United States, and that he will coordinate his efforts with those made by his fellows. We know that each man will be filled with the determination to win, and we shall win.

During the week ending October 22, 2,555 men were examined by each of the medical boards. Of these there were rejected on account of disease by the tuberculosis board (2,342 examined), 10; by the cardiovascular board, 9; by the ophthalmologists, 12; by the board examining the mentally defective, 5. The results of the work of the tuberculosis board are of interest in that they indicate the probable percentage of incidence of pulmonary tuberculosis among the supposedly healthy members of the communities in our north middle states. Cases discovered by this board are incipient. The advanced ones have already been thrown out by the physicians who examined the men on enlistment. This percentage has been 0.5 per cent., and it is probable that during the autumn months this percentage of individuals in any of these communities is developing active pulmonary tuberculosis. Special effort is made to detect these early cases. Organization commanders are requested to send for examination all men in their command who have cough and expectoration, or who show lassitude and inability to perform full duty. New cases are promptly discovered, and the probability of recovery of those thus early detected is great.

VENEREAL DISEASE

The number of cases of venereal disease contracted in or about the camp is gratifyingly small. Since the division

came to Camp Cody, Aug. 25, 1917, only eleven new cases of gonorrhea and one case of chancroid have developed. When it is considered that the total number of men in the camp is over 22,000, this affords a gratifying evidence of the efficiency of the measures of prevention that have been instituted. This is a percentage of 0.0036 per month. Many of these patients had not taken the required prophylaxis. They thus come under the operation of G. O. 31, 1912. They are deprived of pay while off duty, and they will be tried by court martial for neglect of duty and failure to obey orders. In contrast with this small percentage of cases contracted here, it is very interesting to note that 440 cases were imported. The anxiety that has been expressed concerning the dangerous moral environment of our troops in camps would be better directed toward the home environment, since the number of cases contracted at home is to the number of cases contracted at camp as 38:1.

The treatment of these cases is a matter of great importance in the Army, since there depends on it the effectiveness of many U. S. soldiers. That which is required in this camp is stated in the following memorandum:

MEMORANDUM ALL SURGEONS, THIRTY-FOURTH DIVISION

The division surgeon desires that the following recommendations be followed as closely as equipment will permit in the treatment of venereal diseases at regimental infirmaries:

GONORRHEA

1. Patients must be instructed in personal cleanliness. They will be advised to wash their hands after each urination and will be cautioned against the danger of infection being carried to the eyes by unclean hands.

2. It is necessary in the thorough treatment of gonorrhea that the penis be cleansed before each injection, with a nonirritating soap and water. Frequently the foreskin is not retracted and the penis is not thoroughly cleansed. The practice of sealing the urethra by means of a small pledget of cotton, which is held in place by retracting the foreskin over the head of the penis, should be avoided. This tends to prevent drainage, and reinfection frequently takes place. The best method of protecting the clothing is to put a piece of clean cotton over the end of the penis to extend about one-third way back and which can be held in place by means of a rubber band.

3. After the above cleansing process, the patient will be advised to urinate before each injection. As gonorrhea is an acute infection of the mucosa of the urethra only, it is necessary that whatever treatment is carried out be nonirritating and one that will not increase the inflammation. When too strong injections are given, posterior urethritis is frequent, and injury to the mucosa occurs which results in chronic gonorrhea or gleet. It is advisable to begin with an injection that is not stronger than one fourth of 1 per cent. protargol. This can be increased, depending on the patients' tolerance and the amount of discharge. Injections should be given every two to six hours by the surgeon, or under his supervision. Care should be taken that the syringe does not traumatize the mucosa and thus open up new avenues of infection. The urethra should not be overdistended, but should be comfortably filled so that the patient has no difficulty in holding the drug at least ten minutes.

The surgeon must insist that all patients drink a large quantity of water, which can be made bland by the use of small doses of sodium bicarbonate. Hexamethylenamin and other urinary antiseptics are very useful, but must not be used in large enough doses to produce irritation of the sphincter and posterior urethra. The injection of large quantities of water causes the urethra to be continually flushed from within out, which is the desired effect. Erections at night should be avoided. Advise your patients to sleep with a little less than the usual amount of covering. It is not desirable that they be chilly or cold, but too much warmth frequently induces erections. When necessary, bromids or other nerve sedatives should be used to control erections.

4. Glass syringes are frequently broken when boiled. They can be disinfected and the gonococcus killed by immersion in a phenol (carbolic acid) solution. Care should be taken that they are thoroughly washed before being used.

5. Much better results can be obtained when using silver salts if the surgeon will have the solution freshly prepared.

6. Frequent examination of the urethral discharge is necessary. This can be accomplished by referring the patient to the base hospital with a note asking that a smear be made. The proper time to obtain such a specimen is before the morning urination.

7. Gleet or chronic gonorrhea is the result of infection into the submucosa of the urethra. It is necessary in this group of cases, after the gonococcus has disappeared, to sound the patient regularly. This will be done by the chief of the genito-urinary clinic at the base hospital, and such patients can be directed to see this officer at the Friday conference and at such other times as the officer may direct.

8. Chronic cases that do not respond to the usual treatment as carried out at the infirmary should be referred to the officer in charge of the genito-urinary clinic, base hospital, for diagnosis and suggestions relative to treatment.

9. Patients requiring endoscopic or cystoscopic examinations will be referred to the base hospital.

CHANCROID

1. All suspicious sores will be referred to the base hospital for diagnosis before treatment is begun. Dressings and medicines of all kinds should not be used before the officer in charge of the laboratory has had an opportunity to obtain some serum for dark field examination. Chancroid is best treated by soaking the penis in some mild antiseptic solution which should be comfortably hot. A saturated solution of argyrol, or the pure crystals of argyrol, applied to such a lesion will usually bring about quick recovery. The inguinal adenitis can usually be controlled by applications of blue ointment. Vaccines are of some use in very chronic cases. The surgeon must be on the lookout for a double infection, as frequently a lesion begins as a chancroid, and later a syphilitic infection develops. When suppuration of the inguinal glands occurs, patients should be immediately referred to the base hospital for treatment.

CHANCRE

1. As mentioned above, every suspicious sore should be examined by the officer in charge of the laboratory, base hospital, so that if syphilis is present, treatment can be started at once. It is necessary to have sterile distilled water for intravenous treatment. Patients requiring salvarsan or neosalvarsan or the intramuscular injection of mercury will be referred to the base hospital. These patients need not remain in the hospital, and can be returned to duty the same day. The Wassermann test is not positive in early syphilis, so that it should not be depended on for a diagnosis. The test should be used in every suspicious case except the early primary lesion. In these cases, as mentioned above, the serum examination for spirochetes is positive in every case of syphilis. A negative Wassermann test does not mean that syphilis is absent. It is necessary that the surgeon study the case together with the laboratory findings before making his diagnosis. Provocative medication is frequently necessary. Mercury can best be used by the inunction method. When this method is used, it is necessary that the surgeon personally supervise the rubbing so that he knows at all times the amount of mercury the patient is absorbing. A good plan to follow is that the men be required to sleep in their undershirts and that the mercury be rubbed into the torso. They should bathe but once a week, at which time the undershirts can be changed. Five treatments per week are sufficient. A course of treatment should take six hours, and consist of thirty rubs.

2. Cases that should be referred to the base hospital: acute epididymitis; posterior urethritis; prostatitis; seminal vesiculitis; suppurating buboes that require drainage; cases for intravenous medication; cases for Wassermann test; in addition, the above mentioned cases for diagnosis and special treatment.

A copy of this memorandum will be posted in a conspicuous place in the room in which venereal treatment is given.

By order of Lieutenant-Colonel.

Some other lines of sanitary work in progress are important. Food is being carefully inspected. All that comes into camp must conform to certain standards. Meat passes the local inspector of the BAI before delivery to the quartermaster, and between the quartermaster and the companies it must pass that of the camp inspector. Milk must measure up to the standards set by the BAI. It must not score less than 75 per cent., and dairies are inspected once in thirty days. Bacteriologic examinations of milk are made, and those dairies whose produce fails to be approved are denied permission to sell to the camp, nor are ice cream factories, bakeries, etc., using this milk permitted to sell to the camp. Canned goods are inspected before issued. Those cans that are leaky and those showing the presence of gas are rejected. The laboratory at the base hospital is now equipped to conduct these examinations for the camp.

The examination of all those concerned in the preparation or handling of food to discover carriers of typhoid or paratyphoid has resulted in the detection of one paratyphoid carrier, who was promptly relieved from duty in the kitchen.

Incoming troops are examined on the train for contagious disease. At the end of their long trips, those trains pull into our sidings, and our newcomers are given a welcome by the band; but before they come within hearing of the martial music, Major Kenney, M. C. N. G., and his staff are already inspecting them, and some unfortunates go from the train directly to the contagious wards of the base hospital. All the others must go to the detention camp of the depot brigade, where during two weeks they carry on in isolation the work of training, before they are admitted into full membership and good standing in our healthy community. Everywhere throughout the camp cases of contagious disease that appear are promptly removed to the hospital, and the contacts, that is, those living in the same tent or in immediate association with them, go to the contact camp out in the unmitigated desert, there to enjoy a noninterrupted view of the far away mountains during whatever leisure is permitted them by the system of intensive training which makes its presence felt even there. The contact camp was commanded by a line officer, there being about 300 men in it; but as this arrangement proved unsatisfactory it is now in charge of Ambulance Company No. 134, commanded by Lieut. F. H. Roost. The Medical Department has taken it over entirely.

Thirty-Fifth Division, Camp Doniphan, Fort Sill, Okla.

A quadrilateral, the monotony of its low and once white-washed stone walls broken only by the regularly spaced chinks through which one time blazed the fire of the trooper's rifle—such is old Fort Sill.

WORK OF THE DIVISION SURGEON

The sanitary and medical care of the camp is in charge of Lieut.-Col. W. T. Davidson of the Regular Army, under whose efficient and experienced leadership the camp has fared exceptionally well so far. He is ably assisted in this work by Major Carl Philipps, M. R. C., sanitary inspector, and Capt. W. L. Gist, M. R. C., adjutant. One of the difficult problems that the division surgeon had to solve was represented in the water supply. Owing to an unprecedented inadequate rainfall, which has continued now for a period of almost eighteen months, the impounded waters of Medicine Lake, which supply the camp, had become exceedingly offensive from an overgrowth of algae. This condition has now been quite satisfactorily overcome by adequate methods of treatment, to which the present cold weather has given considerable assistance.

The immunization of the troops against typhoid, paratyphoid and smallpox has practically been completed. In addition to these preventive measures, all cooks and those who handle or prepare food are being subjected to special examination to determine their freedom from typhoid germs. So far no carriers have been found.

A special course of instruction in matters pertaining to camp hygiene and sanitation, as well as the special features in the examination of recruits, has been arranged for and is well attended and appreciated. Special examining boards for tuberculosis, cardiovascular, and nervous and mental diseases are also active in weeding out the unfit.

The venereal disease problem also, here as elsewhere, forms one of the important considerations. Since October 1 there have been 322 venereal disease patients under treatment in this division; this makes approximately 1.3 per cent., a figure not excessive when compared with civil life statistics, especially when one considers that under the draft many men already infected are brought into camp.

The general disease incidence for the camp has been low thus far, reaching not quite 2 per cent. Contagious diseases have been relatively infrequent. Since the establishing of the camp in August there have been all told but two cases of cerebrospinal meningitis, nine of diphtheria and fourteen of pneumonia in the division. A case of anthrax with recovery may be mentioned among the more unusual infections that have come under observation. An outbreak of measles in one of the companies was promptly controlled by rigid isolation, and no new cases have been noted.

It is the opinion generally here among medical men that the absence of alcohol has added greatly to the efficiency of the men and to a lessened morbidity.

BASE HOSPITAL NOTES

Pending completion of the base hospital, the sick are being taken care of at the post hospital of Fort Sill. The opening of a number of wards of the new base hospital has made the care of the patients less difficult, however. When all of the buildings are completed there will be hospital accommodations for more than 1,200 patients, a little more than 3 per cent. of the total command. Past experience of the Army Medical Department has shown that this is about the average of sick in large commands.

Major P. B. Connolly of the Regular Army is in command at the base hospital, and the chief branches of the service under him are in the hands of the following Medical Reserve Corps officers: Major A. W. Barksdale, surgery; Major S. Strauss, medicine; Major A. C. Magruder, eye, ear, nose and throat, and Major G. C. Ruhland, laboratories.

Eighty-Third Division, Camp Sherman, Chillicothe, Ohio

Camp Sherman is situated on a broad plain of alluvial deposit on the west bank of the Scioto River. It is 2 miles north-northwest of Chillicothe, which is 50 miles south of Columbus and 98 miles northeast of Cincinnati.

The cantonment is rectangular, half a mile wide and about 2 miles long, and lies in a bend of the river, which for 15 or 20 miles follows a serpentine course. It is in one of these curves that the camp is placed. The barracks and officers' quarters are completed, and most of them are heated.

DISEASE INCIDENCE

There have been about forty cases of pneumonia, but no epidemic. In the second increment of the draft a patient with acute tonsillitis arrived, and before isolation was effective there were thirteen cases; the next day there were eighteen cases and on the third day eleven cases; from then on the epidemic subsided to nine cases, then three, and after the sixth day no other cases appeared. The rapid development of these cases and the prompt subsidence of the epidemic prove the infectious nature of the process and warrant immediate and vigorous action when such cases appear in groups of men. There were eight cases of Vincent's angina, but they yielded promptly to local treatment. One case of epidemic meningitis showed the immediate effects of the injection of Flexner's serum, 400 c.c. of which were injected, partly by the intravenous and partly by the intraspinal route. All contacts were isolated and throat cultures were negative. In the city of Chillicothe there have been sixteen cases of smallpox, but none in the camp. Every draft or enlisted man before his physical examination is completed is vaccinated. The inoculations against typhoid and paratyphoid A and B have been followed by the usual reactions, but there were none of unusual severity.

PERSONAL

First Lieutenant Brainard from the Infantry School of Arms, Fort Sill, Okla., is in charge of the instruction in methods of gas defense and the treatment of gas casualties.

The Ross County Academy of Medicine, October 10, gave a delightful entertainment for the medical officers of the camp. It was well attended, and the president, Dr. F. T. Marr, made a cordial address of welcome which was responded to by Lieut.-Col. Wallace De Witt, the division surgeon. The county societies and the local medical societies as well as the druggists have arranged a plan of cooperation for the improvement of the sanitary conditions of the city and county which should prove of the greatest value and yield excellent results.

The campaign for the Second Liberty Loan obtained the total subscription of over $2,000,000 from the division.

The medical and sanitary problems are in the care of the division surgeon, Lieut.-Col. Wallace De Witt, M. C., U. S. Army, who has been four years at Fort Ethan Allen, Vt., and for two summers in charge of the training camps at Plattsburg, N. Y. Major John A. Burket, M. C., is in charge of the sanitation. Capt. Robert H. Halsey, M. R. C., is assistant division surgeon.

The base hospital, with a capacity of 1,000 beds, is under the command of Major Edward G. Huber, M. C. Major Christian R. Holmes of Cincinnati is chief of the otolaryngologic service. Major Casey A. Wood, M. R. C., of Chicago is chief of the ophthalmologic section. Major James A. Harvey, M. R. C., is chief of the surgical service. Major Dudley DeV. Roberts, M. R. C., is chief of the medical service. Captain Stanley M. Rinehart, M. R. C., is special examiner in tuberculosis. Capts. Henry L. Stick, M. R. C., Elmore E. Adel, M. R. C., and Charles W. Hoyt, M. R. C., are among those doing special work.

First Lieut. Benjamin H. Sherrard, Dental Corps, is directing the work of the dentists, of whom there are about forty-five in the cantonment.

The sanitary train is under the direction of Major Henry S. Satterlee, M. R. C. Major John R. McDowell, M. R. C., commands the ambulance companies. The field hospitals are well organized and almost completely equipped.

That the general health of the camp is excellent is shown by the noneffective rate, which is 14 per thousand.

Eighty-Sixth Division, Camp Custer, Battle Creek, Mich.

Preparations are being made through all regimental sanitary detachments to systematize the work of examining the remaining draft increment that is due to arrive almost any day. This will represent 55 per cent. of the original draft. With the experience gained through the examinations of those already here, there is no doubt that the large number expected will be run through with rapidity and precision. It is expected that there will be fewer discharges on account of physical disability than among the first examined, owing to the fact that the examining boards in the draft districts will be more thoroughly trained through the experience they have already had. The division surgeon has outlined plans which, when carried out, should make it possible for every medical officer to gain some experience in this form of examination and some practical knowledge of the paper work

necessary in making out reports for acceptance and for discharge. Changes which are contemplated following an outlined course of instructions as suggested by Colonel Munson, U. S. M. C., will cause a general mix-up of all medical officers for the purpose of instructing them in the necessary detailed work of every medical organization in the division. Field hospital and ambulance company officers and enlisted men will be changed to regimental detachments, regimental detachment officers and enlisted men to field hospitals and ambulance companies, thus making it possible for every medical officer to become familiar with the work of the various organizations, making for greater efficiency in every department. Courses of lectures by line officers and experts in military hygiene, sanitation and the various medical and surgical specialties will be given and must be attended by all medical officers. This is not done with the view of making specialists of medical officers, yet it is very necessary that the medical personnel be thoroughly trained in all branches represented by these courses of instruction.

The Calhoun Medical Society of Battle Creek met Tuesday evening, November 6. Major Roy Bishop Canfield read a paper entitled "Consideration of Some Types of Sepsis and Their Results." Major Ernest Edward Irons read a paper entitled "Chronic Muscular and Articular Rheumatism: Treatment as Based on Etiology." These papers were discussed both by the civilian physicians and the members of the Medical Department, who were present in large numbers.

SANITARY TRAIN

The weather conditions have improved so that outdoor work has been progressing rapidly. Long hikes with maneuvers are daily occurrences. The men relish the change, as lecture work and indoor drills were becoming very tiresome.

Ambulance Company No. 340 gave a large banquet to the officers of the company Tuesday evening, November 6. Invited guests were Major E. C. Jackson, director of ambulance companies; Major Lewis Wine Bremerman, director of field hospitals, and Capt. C. J. MacGuire of Ambulance Company No. 337. Home talent was utilized, and a very enjoyable evening was the result.

Athletes are numerous in the sanitary train. The ambulance companies have developed an extraordinarily fine football team. They have been coached by Capt. H. H. Varner, commanding Ambulance Company No. 340, late coach of the University of Virginia. The team has been unbeaten this season, and has challenged any football team from any sanitary train in training at the present time.

BASE HOSPITAL

The base hospital is nearing completion, and in a short time will be in a position to carry out all its work in a normal manner. Major Wood, commanding, is to be congratulated on the manner of conducting the work there to date, handicapped as he has been by cramped quarters, inclement weather, incomplete heating arrangements, and other difficulties. All patients have been given fine care, and there has been no complaint from any quarter.

Eighty-Ninth Division, Camp Funston, Fort Riley, Kan.

This camp was originally planned for one infantry division and one depot brigade. Now, however, there are really three divisions: the eighty-ninth, white; the ninety-second, colored, and the depot brigade, while the division surgeon's office, therefore, is practically handling the work of an army corps. Nevertheless, the work of examining the men of the National Army has been done quickly and smoothly. It has been so systematized that one examining board has frequently examined over a thousand men in a day, including the administering of smallpox vaccine and the initial dose of the typhoid and paratyphoid prophylaxis.

A training officer, Medical Department, has been appointed for the Eighty-Ninth Division, and a schedule of instruction for the officers and men of the Medical Department has been instituted. Special subjects pertaining to work of the line are given in nightly lyceum lectures, by special officers of the departments concerned. The medical subjects necessary for the instruction of the enlisted personnel are taught by medical officers of the various organizations to which these men belong.

Col. Frank W. Weed, M. C., is sanitary inspector of the Eighty-Ninth Division. Major J. M. White, M. R. C., of St. Paul, is sanitary inspector of the Ninety-Second Division. Capt. R. B. Irones, M. R. C., of San Diego, Calif., is instructor in gas defense for the Eighty-Ninth Division.

The base hospital of Camp Funston is located at Fort Riley, 4 miles away. Patients, and clothing to be fumigated, are taken there and returned by ambulances over the new government macadamized road. A simple system of paper work has been instituted for these transfers, and no confusion results. At present, out of the whole command, there are approximately 30 cases of measles, 25 cases of cerebrospinal meningitis, 35 of mumps, 2 of scarlet fever and 50 of lobar pneumonia. No serious accidents have occurred, the worst being the loss of three fingers by a private who was fashioning a wooden rifle with an ax.

VENEREAL DISEASE

In civil life we have all heard of the great frequency of venereal diseases among soldiers of the Regular Army. In view of this teaching, it may be of interest to note our experiences in the examination of the National Army men just out of civil life on their arrival in camp. For the white troops the incidence of all venereal diseases has ranged between 5 and 6 per cent.; for the colored troops, over 20 per cent. These are all cases contracted prior to enlistment. At the time of present writing, no case has been reported that has been contracted since entering the military service in the Eighty-Ninth Division, which should furnish food for thought.

TYPHOID VACCINATION

A number of officers and men had received their typhoid prophylaxis prior to the order which made paratyphoid vaccination likewise compulsory. These men have subsequently had to take the three doses of paratyphoid A and B vaccine, whereas the men of the National Army have received only the three doses of U. S. triple vaccine, which consists of the paratyphoid and typhoid vaccines combined. It has been an experience common to the medical men of the camp that the reaction from the inoculation of paratyphoid vaccine, alone, has been much more severe than that of the triple vaccine or of the typhoid vaccine, alone. So far, no explanation has been attempted.

"SOB LETTERS"

An unpleasant phase of a medical officer's life is the "sob letters." Dozens of these, in tenor all alike, came through here every week. Anxious mothers, overzealous wives, and even mere acquaintances flood us with affidavits and letters about the physical condition of some of the men brought here by the draft. Some of these letters are extremely sad, others are absurdly funny, but all alike are given full consideration, which means a reexamination of the person referred to, by the already overworked surgeon. These letters rarely amount to anything, as the men unfit for service have already been weeded out as nearly as is humanly possible by the surgeons of the organizations to which they are attached, or by the Camp Board of Special Examiners.

PERSONAL

Capt. Bruce Ffoulkes, M. R. C., has been made director of field hospital companies, and Lieut. John D. Bartlett, M. R. C., has been made director of ambulance companies, of the Three Hundred and Fourteenth Sanitary Train, Eighty-Ninth Division. Lieut.-Col. Harry L. Boyer, M. C., has been appointed division surgeon of the Ninety-Second Division, and Captain Nicholls, M. R. C., formerly of the Presbyterian Hospital in Chicago, has been made his assistant. Lieut. Louis G. Harney, M. R. C., of wide industrial medical experience with the American Steel Foundries of East St. Louis, is assistant to the division surgeon of the Eighty-Ninth Division. Lieut. Judd H. Kirkham, M. R. C., of Langdon, N. D., is attending surgeon of the headquarters, Eighty-Ninth Division. Lieut. Albert G. Bower, M. R. C., formerly of the Department of Bacteriology, University of Chicago, is medical training officer of the Eighty-Ninth Division.

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES

Extracts from Telegraphic Reports Received in the Office of the Surgeon-General for the Week Ending Nov. 2, 1917

1. Total strength of troops	1,001,632
Admission rate per 1,000 (disease only) .....annual	955.2
Non-effective rate (all causes)	25.6
2. National Guard, strength	373,180
Admission rate per 1,000 all camps (disease only) annual	1,108.8
Non-effective rate all camps (all causes)	24.5

Camps showing admission rate for disease higher than average: Camps Kearney, Wheeler, Cody, Bowie, Sevier, Beauregard and Shelby.

Camps showing noneffective rate higher than average: Camps Wheeler, Bowie, Logan, MacArthur, Shelby, Beauregard, Sevier, Cody, Hancock and Kearney.

3. National Army, strength 426,578
   Admission rate per 1,000 all camps (disease only) annual.. 929.8
   Non-effective rate all camps (all causes) 20.1

Camps showing admission rate for disease higher than average: Camps Pike, Jackson, Dix, Dodge, Travis, Funston, Gordon and Lewis.

Camps showing noneffective rate all causes higher than average: Camps Pike, Dodge, Funston, Lewis and Dix.

4. Venereal Disease—
   Admission rate Regulars 90.4
   Admission rate National Guard (camps) 93.6
   Admission rate National Army 135.6

Camps National Guard having rate above average: Camps Sheridan, Wheeler, Kearney, Logan, Sevier, MacArthur and Bowie.

Camps National Army having rate above average: Jackson, Pike, Custer, Dix, Lee, Travis and Meade.

5. Number of cases of pneumonia 228
   Highest number in any one camp ..... Funston 22
   Number of cases of meningitis 18
   Highest number in any one camp ..... Funston 9

	Regulars, U. S. Army, in U. S. only, 1916		Regulars in U. S. week ending Nov. 2, 1917		Nat'l Guard, All Camps, week ending Nov. 2, 1917		Nat'l Army, All Camps, week ending Nov. 2, 1917	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Admissions, diseases only, annual rate per 1000	....	613	....	831.8	....	1108.8	....	929.8
Pneumonia	....	2.59	24	17.2	92	14.0	78	9.7
Dysentery	....	3.97	5	1.2	2	0.3	2	0.2
Malaria	....	12.52	7	1.8	49	7.4	43	5.3
Venereal	....	91.00	351	90.4	615	93.6	1085	135.6
Paratyphoid	....	0.31	....	0	....	0	1	0.1
Typhoid	....	0.21	....	0	2	0.3	5	0.6
Measles	....	20.29	145	37.3	990	150.8	786	98.2
Meningitis	....	0.29	3	0.7	3	0.4	22	2.7
Scarlet fever	....	0.59	17	4.3	15	2.8	6	0.7

6. SPECIAL DISEASES REPORTED DURING THE WEEK ENDING NOV. 2, 1917

Division	Pneumonia	Dysentery	Malaria	Venereal	Paratyphoid	Typhoid	Measles	Meningitis	Scarlet Fever	Strength of Command
27th, Wadsworth	...	...	1	46	...	...	....	1	...	30,014
28th, Hancock	1	...	...	39	...	...	....	...	...	28,669
29th, McClellan	3	...	...	31	...	...	18	1	...	25,390
30th, Sevier	19	...	2	46	...	...	258	1	...	23,058
31st, Wheeler	15	1	12	62	...	...	248	...	...	21,102
32d, MacArthur	...	...	...	51	...	1	16	...	...	26,010
33d, Logan	5	...	23	57	...	...	3	...	...	23,267
34th, Cody	2	...	...	43	...	...	70	...	9	25,150
35th, Doniphan	4	...	2	59	...	...	13	...	1	25,512
36th, Bowie	11	...	3	47	...	1	244	...	...	24,514
37th, Sheridan	...	...	...	73	...	...	16	...	...	24,171
38th, Shelby	20	1	4	36	...	...	50	...	...	22,368
39th, Beauregard	3	...	2	4	...	...	24	...	...	6,471
40th, Kearney	8	...	...	15	...	...	21	...	...	18,333
41st, A. L. Mills	1	...	...	45	...	...	9	...	...	10,690
76th, Devens	3	...	...	38	...	...	1	...	...	30,073
77th, Upton	1	...	...	19	...	...	1	...	...	27,762
78th, Dix	...	1	...	102	...	5	....	...	...	19,877
79th, Meade	...	...	...	8	...	...	....	...	...	24,802
80th, Lee	3	...	1	188	...	...	....	2	...	34,824
81st, Jackson	3	...	3	191	...	...	141	...	...	17,139
82d, Gordon	....	...	...	45	...	...	31	2	...	20,065
83d, Sherman	4	...	1	41	...	...	....	...	...	33,737
84th, Taylor	7	...	1	4	...	...	48	1	...	26,489
85th, Custer	...	...	...	10	...	...	11	3	3	15,898
86th, Grant	2	...	...	13	...	...	....	2	...	27,764
87th, Pike	13	1	11	177	...	...	529	2	...	21,234
88th, Dodge	6	...	...	53	...	...	4	...	1	20,388
89th, Funston	22	...	2	37	...	...	17	9	2	31,962
90th, Travis	10	...	24	96	1	...	....	...	...	28,665
91st, Lewis	4	...	...	68	...	...	3	1	...	35,088

7. Deaths by causes—
   Pneumonia, lobar 22
   Cerebrospinal meningitis 9
   Pulmonary tuberculosis 2
   Diabetes mellitus 1
   Acute colitis 1
   Endocarditis 1
   Appendicitis 1
   Measles 1
   Cerebral abscess 1
   Rupture right ventricle 1
   Dementia praecox 1
   Suicide 5
   Traumatism 4
   Traumatism by firearms 2
   Traumatism by railroad 2
   Traumatism by automobile 1
   Wood alcohol poisoning 1

ORDERS TO OFFICERS OF THE MEDICAL CORPS

To report to Board for examination for promotion: Col. HENRY D. SNYDER, Washington, D. C.; Majors WILLIAM K. BARTLETT, Takoma Park, D. C.; WILLIAM A. DUNCAN, Washington, D. C.; and PAUL L. FREEMAN, Fort Myer, Va.

Major HERBERT C. GIBNER, now on duty in the Hawaiian Department *to report to board* convened by the commanding general, Hawaiian Department, *for examination for promotion.*

Col. ALBERT E. TRUBY, now on duty in the Panama Canal Department, *to report to board* convened by commanding general, Panama Department, *for examination for promotion.*

To report to board convened by commanding general, American Expeditionary Force, France, *for promotion,* Col. JAMES R. CHURCH; Lieut.-Cols. CHARLES L. FOSTER, JAMES D. HEYSINGER and JOSEPH F. SILER; Majors LUCIUS L. HOPWOOD, HENRY J. NICHOLS, OMAR W. PINKSTON, GUY V. RUKKE, ROBERT M. CULLER, CLEMENS W. McMILLAN, ARTHUR N. TASKER, and H. VAN KIRK.

To report to board convened by commanding general, Western Department, *for promotion,* Col. ELMER A. DEAN, San Francisco, Calif.; Lieut.-Col. WILLIAM H. TEFFT, Fort Douglas, Utah; and Major WILLIAM R. DAVIS, Fort Rosecrans, Calif.

To report to board convened by commanding general, Central Department, *for promotion,* Cols. PERCY M. ASHBURN, Fort Benjamin Harrison, Ind., and HENRY S. GREENLEAF, Fort Snelling, Minn.; Lieut.-Cols. HENRY F. PIPES, and GIDEON McD. VAN POOLE, Fort Benjamin Harrison; Majors HENRY C. PILLSBURY and FRANK W. WEED, Fort Riley, Kan., HOWARD H. BAILY, Camp Grant, Rockford Ill., WILLIAM A. WICKLING, St. Louis, Mo., and WILLIAM S. SHIELDS, Chicago, Ill.

To report to board convened by commanding general Eastern Department, *for promotion,* Col. FRANCIS M. C. USHER, Fort Slocum, N. Y.; Lieut.-Cols. ORVILLE G. BROWN, Camp Mills, Garden City, L. I., N. Y., JOHN R. BOSLEY, Fort Ontario, N. Y., SAMUEL M. DeLOFFRE, Plattsburg Barracks, N. Y., GEORGE F. JUENEMANN, Gettysburg, Pa., and HENRY D. THOMASON, Fort Ontario, N. Y.; Majors LOUIS H. HANSON, Syracuse, N. Y.; HARRY G. HUMPHREYS, Fort Hancock, N. J.; FREDERICK S. MACY, Fort Jay, N. Y., FERDINAND SCHMITTER, Camp Lee, Petersburg, Va.; WILLIAM C. DAVIS, Camp Dix, Wrightstown, N. J., CHARLES L. GANDY, Allentown, Pa., PAUL W. GIBSON, N. Y. C., EDGAR C. JONES, Newport News, Va., and WILLIAM W. VAUGHAN, Allentown, Pa.

To report to board convened by commanding general, Southern Department, *for promotion,* Lieut.-Cols. WILLIAM P. BANTA, Nogales, Ariz., ROBERT L. CARSWELL, Fort Sam Houston, Tex., and ROBERT C. LOVING, San Antonio, Tex.; Majors CLARENCE L. COLE, Fort Sam Houston, Tex., and EIDE F. THODE, Fort Clark, Tex.

To report to board convened by commanding general, Southeastern Department *for promotion:* Lieut.-Cols. CRAIG R. SNYDER, Camp McClellan, Anniston, Ala., and ARTHUR M. WHALEY, Camp Sevier, Greenville, S. C.; Majors CHARLES E. FREEMAN, Camp Pike, Little Rock, Ark., and LEARTUS J. OWEN, Camp Greenleaf, Fort Oglethorpe, Ga.; Lieut.-Col. LOUIS C. DUNCAN, Fort McPherson, Ga., Majors CHARLES W. HAVERKAMPF, Fort Oglethorpe, Ga., and EDWARDS C. REGISTER, Hot Springs, Ark.

To report to board of commanding general, Northeastern Department, *for promotion,* from Camp Devens, Ayer, Mass., Northeastern Department, Major GLENN I. JONES.

Colonel WILLIAM OWEN, to attend meeting of Southern Medical Association, Memphis, Tennessee, Nov. 12 to 16, 1917.

Colonel WILLIAM F. LEWIS, now on duty at San Antonio, Texas, to proceed to the following named places, for the purpose of making special sanitary inspections, and on completion of duty, to return to station: *Waco, Texas,* The Aviation Camp and Camp McArthur; *Fort Worth, Texas,* The Aviation Camp and Camp Bowie; *Dallas, Texas,* The Aviation Camp; *Wichita Falls, Texas,* The Aviation Camp; *Fort Sill, Okla.,* The Aviation Camp and Camp Doniphan; *Houston, Texas,* the Aviation Camp and Camp Logan.

Colonel EDWARD L. MUNSON, *to Roanoke, Va.,* to address Medical Society of Virginia on recruiting and training of medical officers.

Lieut.-Col. CHARLES F. MORSE, relieved from duty at Fort Benjamin Harrison, Ind., and *to proceed to Washington, D. C.,* and report to the Surgeon-General of the Army for duty in his office.

Major EDGAR KING *to Goshen, Va.,* to inspect property under consideration to be used as a general hospital, and on completion of duty to return to station.

Colonel ALLEN M. SMITH, now on duty at Fort Logan, Colo., *to Grand Junction, Colo.,* to report on the suitability and availability of the former United States Teller Institute for use as a general hospital, and on completion of duty to return to station.

Major GLENN I. JONES, now on duty at Camp Devens, Ayer, Mass., *to Washington, D. C.,* and report in person to the Surgeon-General for conference, and on the completion of duty, to return to station.

Major THOMAS D. WOODSON, to the following-named places to determine their suitability for general hospital purposes and inspecting sites for other general hospital purposes: *Stockbridge, Mass.; Worcester, Mass.; Boston, Mass.,* and on completion of the duty at Boston, Mass., to proceed to the following-named places for the purpose of inspecting sites offered for general hospital purposes, and upon completion of this duty to return to his proper station: *Willets Point,* New York; *Camp Mills,* Garden City, L. I., N. Y.; *Iselin,* New Jersey.

Lieut.-Col. WILLIAM H. MONCRIEF, *to New York City*, for temporary duty at the Rockefeller Institute and on completion of duty to return to station.

Major ROBERT H. DUENNER, to be relieved from duty in the Hawaiian Dept. and directed *to proceed to the United States*, and on arrival *to Fort Riley, Kan.*, to organize and command Hospital Train No. 25.

Major STEPHEN H. SMITH, relieved from duty at Schofield Barracks, Hawaii, and *to Fort Oglethorpe, Ga.*, to organize and command Hospital Train No. 23.

Lieut.-Col. WILLIAM C. BORDEN, U. S. Army, Retired, *to Rockefeller Institute* for a course of instruction, and on completion of duty to return to station, Walter Reed General Hospital, Takoma Park, D. C.

Major SAMUEL J. TURNBULL relieved at Fort Benjamin Harrison, Ind., and *to Fort Riley, Kan.*, and report in person to the commandant, to organize and command Hospital Train No. 24.

Lieut.-Col. THEODORE LAMSON, relieved from duty with Field Hospital No. 3, Fort Oglethorpe, Ga., and *to commandant Camp Greenleaf*, for temporary duty.

Major WILLIAM B. MEISTER relieved from duty at the Presidio of San Francisco, Calif., and *to Fort Oglethorpe, Ga.*, to organize and command Hospital Train No. 28.

Major THOMAS L. FERANBAUGH relieved from duty at Laredo, Texas, and *to Fort Worth, Texas*, Camp Bowie, to command base hospital.

Major GEORGE E. PARISEAU, relieved from duty as commanding officer of the base hospital at Camp Bowie, and *to Fort Oglethorpe*, for duty with Field Hospital No. 3.

Colonel IRVING W. RAND, relieved from duty at the Philippine Dept., Tientsin, China, and *to San Francisco, Calif.*, and report in person to the commanding general, Western Department, for duty.

Colonel HENRY A. SHAW, *to Petersburg, Va.*, Camp Lee, for duty in connection with psychologic examinations, and on completion of duty to return to station.

Major ROBERT M. HARDAWAY, relieved at Fort Bliss, and *to Fort Oglethorpe, Ga.*, to organize and command Hospital Train No. 22.

Major WILLIAM R. DEAR, relieved from Philippine Department and *to Fort Oglethorpe, Ga.*, to organize and command Hospital Train No. 27.

Major WILLIAM D. HERBERT, relieved from Philippine Dept. and *to Fort Oglethorpe, Ga.*, to organize and command Hospital Train No. 26.

Lieut.-Col. CHARLES F. MORSE, now at the medical officers' training camp, Fort Benjamin Harrison, Ind., under orders to report to the Surgeon-General's office, to proceed to the following-named camps for the purpose of inspecting the base hospital thereat, and on completion of this duty to comply with previous orders directing him to proceed to Washington, D. C., *Camp Sherman*, Chillicothe, Ohio; *Camp Custer*, Battle Creek, Mich.

Lieut. FRANK L. COLE, relieved from Allentown, Pa., and *to Army Medical School*, for instruction in orthopedic surgery.

ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

Alabama

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Lieut. LEROY H. WOODRUFF, Anniston.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. ROSCOE C. STEWART, Wylam.

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. HARRY P. SHURGERMAN, Birmingham.

To Camp Logan, Houston, Texas, for temporary duty in the base hospital, from Fort Oglethorpe, Lieut. JAMES D. PERDUE, Furman.

To Fort Oglethorpe, for a course of instruction, Lieut. MILES A. WATKINS, Birmingham.

To Newport News, Va., Port of Embarkation, for duty, Capt. MACK ROGERS, Birmingham.

To Philadelphia, University Hospital, for a course of instruction on fractures, and on completion of this course to proceed to Camp McClellan, Anniston, Ala., for temporary duty in the base hospital, Lieut. WILLIAM W. BURNS, Selma.

To his home and to the inactive list of the Medical Reserve Corps on account of being physically disqualified for active service, Lieut. JACOB D. STAPLES, Camp Hugh.

Arizona

To New York City, for orthopedic instruction, Capt. CHARLES T. STURGEON, Globe.

Arkansas

To Army Medical School, Washington, D. C., for a course of instruction, Lieut. JOHN F. LIEBERMAN, Pine Bluff.

To Camp Devens, Ayer, Mass., for duty, from Army Medical School, Capt. HARRY H. TOWLER, Fayetteville.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, from School of Plastic and Oral Surgery, Washington University, St. Louis, Lieut. SIDNEY J. WOLFERMANN, Fort Smith.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Lieut. MARTIN V. B. WADDLE, Success.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. FLOYD CLARDY, Jonesboro.

To Camp Sherman, Chillicothe, Ohio, for duty, from Army Medical School, Lieut. JAMES V. FALISI, Little Rock.

To Fort Riley, Kan., for duty with Hospital Train No. 24, Lieut. GEORGE W. EUBANKS, Wabash.

To St. Louis, Washington University, for a course of intensive training in head surgery, from Fort Riley, Lieut. JAMES W. BUTTE, Helena.

Recommending that his resignation from the Medical Reserve Corps be accepted for the good of the service, from Camp Pike, Lieut. SEABORN J. FULLER, Little Rock.

California

To Army Medical School, Washington, D. C., for a course of instruction, Lieuts. FRANK H. CHASE, Linda Vista; Charles C. Dickinson, McCloud.

To Camp Cody, Deming, N. M., for duty from Fort Riley, Kan., Lieut. HERBERT R. STOLZ, Stanford University.

To Camp Kearny, Linda Vista, California, for duty, from Camp Kearny, on the tuberculosis examining board as Contract Surgeon, Lieut. JOHN E. FAHY, Los Angeles.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. MALCOLM Y. MARSHALL, Bakersfield.

To Canal Zone, to report in person to the commanding general, Panama Department, for duty, from Fort Benjamin Harrison, Ind., Lieut. FRANK H. CHASE, Los Angeles.

To Chicago, Neurological School, Presbyterian Hospital, for intensive training in brain surgery, from Orthopedic School, Boston, Capt. REXWALD BROWN, Santa Barbara.

To Fort McDowell, Calif., for duty, Lieuts. HIRAM E. MILLER, San Francisco; ELMO R. ZUMWALT, San Francisco.

To Fort Oglethorpe, Ga., for a course of instruction, Lieut. CARL W. ROBBINS, San Diego.

To Newport News, Va., Camp Stuart, for duty, from Fort Benjamin Harrison, Lieut. SMITH S. JOHNSON, San Francisco.

To report by wire to the commanding general, Western Department, for assignment to duty, Capt. ARTHUR J. WILKINSON, San Diego.

To report by wire to the commanding general, Western Department, for assignment to duty, Lieut. WALTER I. SUNBURNT, Sacramento.

To San Francisco, and report in person to the commanding general, Western Department, for duty, Lieut. CLARENCE L. BITTNER, Sacramento.

To the inactive list of the Medical Reserve Corps on account of being physically disqualified for active service, from Neurological School, Chicago, Capt. REXWALD BROWN, Santa Barbara.

Canal Zone

To Mineola, L. I., N. Y., for duty at the Concentration Camp and Supply Depot, Field No. 2, from Hazelhurst Field, Capt. EDWARD P. BEVERLEY, Balboa.

To Washington, D. C., and report in person to the Surgeon-General of the Army for temporary duty in his office, from Panama, C. Z., Lieuts. ARTHUR M. ALDEN, Culebra; GEORGE C. DUNHAM, Empire; from Fort Grant, C. Z., CLARENCE P. BAXTER, Fort Grant.

Colorado

To Camp Doniphan, Fort Sill, Okla., Thirty-Fifth Division, for duty, Lieut. ELWYN R. CLARKE, Fort Morgan.

To Camp Kearny, Linda Vista, Calif., for duty at the remount depot, from Fort Riley, Kan., Capt. ALBERT W. METCALF, Jr., Henderson.

To Camp Travis, Fort Sam Houston, Texas, for duty as a member of a board of medical officers for the special examination of a command for tuberculosis, Lieuts. BENJAMIN W. CARLSON, Denver.

To St. Louis, Washington University, for a course of intensive training in head surgery, from Fort Riley, Lieut. FRED H. CARPENTER, Denver.

His resignation to be accepted on account of being physically disqualified for active service, Lieut. THOMAS J. WEST, Denver.

Connecticut

To Army Medical School, Washington, D. C., for a course of instruction, Lieut. CORNELIUS S. CONKLIN, Ansonio.

To Camp Devens, Ayer, Mass., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, Lieut. LEONARD J. LOEWE, Higganum.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Lieuts. ALEXANDER B. TIMM, New Haven; OWEN O'NEILL, Willimantic.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. FRANCIS J. O'BRIEN, Middletown.

Delaware

To Camp Dix, Wrightstown, N. J., Seventy-Eighth Division, for duty from Fort Oglethorpe, Lieut. JOSEPH BRINGHURST, Harrington.

District of Columbia

To Army Medical School, Washington, D. C., for a course of instruction, Lieuts. ROY T. HASKELL, Washington; for duty as assistant professor of ophthalmology and in addition to his other duties be designated as ophthalmologist to the U. S. Soldiers' Home Hospital, SAMUEL C. HENNING, Washington.

To Camp Wheeler, Macon, Ga., for duty with the Eighth Field Artillery, from Camp Robinson, Lieut. HOWARD W. BARKER, Washington.

To Fort Oglethorpe, for a course of instruction, from Allentown, Pa., Lieut. WILLIAM F. O'DONNELL, Washington.

To Havana, Cuba, for duty, Capt. EURICO CASTELLI, Washington.

To St. Louis, Washington University, for a course of instruction, Lieut. JOSEPH D. STOUT, Washington.

To be relieved from the duties assigned him by Paragraph 172, Special Orders, No. 184, Aug. 9, 1917, Lieut. WILLIAM H. HUNTINGTON, Washington.

Florida

To Camp American University, Washington, D. C., for duty with the Thirtieth Engineers from Allentown, Pa., Lieut. PAUL L. GOSS, Mulberry.

To Camp Dix, Wrightstown, for temporary duty in the base hospital, from Syracuse, N. Y., Capt. HARRY A. PEYTON, Jacksonville.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. HUGH ST. G. GEIGER, Kissimmee.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieuts. ADAM C. WALKUP, McIntosh; LEONARD G. LARNER, Tampa.

To Camp MacArthur, Waco, Texas, Thirty-Second Division, from Fort Oglethorpe, Lieut. EVERARD BLACKSHEAR, Citra.

To Camp Sevier, Greenville, S. C., for temporary duty in the base hospital, Capt. LYSTON H. D. PIERCE, Tampa.

To Mineola, L. I., N. Y., for duty with Field No. 2, Lieut. CLAUDE V. GAUTIER, Passagrelle.

To Tenafly, N. J., for duty as registrar, with Venereal Hospital, from Fort Oglethorpe, Lieut. JOHNSON N. McCARTNEY, Melrose.

To Washington, D. C., for duty with Repair Shop Unit No. 302, for duty, Allentown, Pa., Lieut. WILLIS J. VINSON, Tarpon Springs.

Honorably discharged from the Medical Reserve Corps, on account of having accepted a commission in the U. S. Navy, from Fort Barrancas, Fla., Lieut. MARION E. QUINA, Pensacola.

To the inactive list of the Medical Reserve Corps on account of being physically disqualified for active service, from Allentown, Pa., Lieut. OVEDIA F. GREEN, Mayo.

Georgia

To Army Medical School, Washington, D. C., for a course of instruction, Lieut. JOSEPH W. SMITH, Jr., Atlanta.

To Camp Beauregard, Alexandria, La., for temporary duty in the base hospital, from Fort Oglethorpe, Lieut. CECIL STOCKARD, Atlanta.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, from Camp Robinson, Sparta, Wis., Lieut. CHARLES K. HOLMES, Gaines.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. JOSEPH H. MULL, Rome.

To Camp McClellan, Anniston, Ala., Twenty-Ninth Division, from Fort Oglethorpe, Lieut. IRA C. H. GARST, Carrollton.

To Camp Sevier, Greenville, S. C., for duty, from Fort Oglethorpe, Lieut. CLAUDE G. SCRUGGS, Valdosta.

To Camp Stuart, Newport News, Va., for duty, from Allentown, Pa., Lieut. MARK E. PERKINS, Millen.

To Camp Wadsworth, Spartanburg, S. C., Twenty-Seventh Division, from Camp Greenleaf, Lieut. LUCIUS P. FARMER, Spread.

To Camp Wheeler, Macon, Ga., Thirty-First Division, for duty, Lieut. FRED B. RAWLINGS, Sandersville.

To Chickamauga Park, Ga., for duty with the Eleventh Infantry, from Camp Wheeler, Ga., Lieut. EGBERT M. TOWNSEND, Tilton.

To Fort Oglethorpe, for a course of instruction, Lieut. DANIEL N. MATHESON, Atlanta.

To Fort Oglethorpe, for a course of instruction from Duval County Hospital, Jacksonville, Fla., Lieut. JAMES M. BRYANT, Savannah.

To Philadelphia, University Hospital, for a course of instruction in fractures, and on completion of this course to proceed to Anniston, Ala., Camp McClellan, for temporary duty in the base hospital, from Camp Meade, Lieut. A. NATHAN DYKES, Columbus.

Hawaii

To Rockefeller Institute, for a course of instruction, and on completion of this course, directed to proceed to his proper station, Major FREDERICK FOUCER, Honolulu.

To San Francisco, for duty, from Hawaiian Department, Capt. JOHN B. LUDY, Honolulu.

Idaho

To Camp Lewis, American Lake, Washington, Ninety-First Division, Lieut. FREDERICK W. DIDIER, Harrison.

To Fort Omaha, Neb., U. S. Army Balloon School, for duty, from Camp Lee, Petersburg, Va., Capt. FRANCIS H. POOLE, Pocatello.

Illinois

To Army Medical School, Washington, D. C., for a course of instruction, Lieuts. ALFRED E. JONES, JOSEPH H. ST. JOHN, BEVERIDGE H. MOORE, Chicago.

To Austin, Texas, Military School of Aeronautics, for duty, from Fort Benjamin Harrison, Lieut. GEORGE O. CULLI, Ina.

To Boston, Harvard University, for a course of instruction in orthopedic work, Lieut. HARRY J. FORTIN, Chicago.

To Camp American University, Washington, D. C., for duty, from Allentown, Pa., Lieut. JOSEPH C. KIMBALL, Joliet.

To Camp Custer, Battle Creek, Mich., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. EDWIN S. GILLESPIE, Wenona.

To Camp Grant, Rockford, Ill., for duty in the remount department, Capt. GEORGE E. BURDICK, Chicago; Lieut. MAX ROSENSTIEL, Chicago.

To Camp Greenleaf, Ga., for a course of instruction, Capt. WALTER VERITY, Chicago; Lieuts. LOUIS H. HAYES, Alton; FRANK T. DUFFY, Chicago; JOHN W. DUNN, Dieterich; JOHN G. HENSON, Wyoming.

To Camp Lee, Petersburg, Va., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. LUCIUS F. WRIGHT, Dunning.

To Camp Logan, Houston, Texas, for duty, from Allentown, Pa., Lieut. VERNE HAYS, Canton.

To Camp Shelby, Hattiesburg, Miss., for duty, Lieut. CHARLES S. KIBLER, Chicago.

To Camp Sherman, Chillicothe, Ohio, for duty from Army Medical School, Lieut. LEONARD W. WEAVER, Chicago.

To Chanute Field, Rantoul, Ill., for duty from Fort Benjamin Harrison, Capt. LORIN G. COLLINS, Chicago; Lieuts. RALPH G. CRESSMAN, Oglesby; OSCAR YARNELL, Decatur.

To Chicago, County Hospital, for a course of instruction in military roentgenology, Lieut. ARTHUR E. ROGERS, Bloomington.

To Chicago, Neurological School, Presbyterian Hospital, for intensive training in brain surgery, and on completion of this course to return to his proper station, from Fort Benjamin Harrison, Lieut. ORLANDO F. SCOTT, Chicago.

To Fairfield, Ohio, for duty on the Wilbur Wright Field, from Fort Benjamin Harrison, Lieuts. CLAIR L. STEALY, Freeport; JOEL E. TOOTHAKER, Ladd.

To Fort Benjamin Harrison, Ind., for duty with Hospital Train No. 2, Lieuts. EUGENE A. MOULTON, Chicago; for duty with Hospital Train No. 3, ROBERT R. KIRKPATRICK, Chicago; for duty with Hospital Train No. 4, THEODORE E. MILLER, Chicago.

To Fort McPherson, Ga., for duty in the base hospital, Capt. WILLIAM W. HOYT, Chicago.

To Newport News, Va., Three Hundred and Third Stevedore Regiment, for duty, from Allentown, Pa., Lieut. EARL K. LANGFORD, Chicago.

To New York City, Cornell Medical College, for a course of instruction in military roentgenology, from Fort Benjamin Harrison, Capt. BERNARD M. CONLEY, Wilmette; Lieuts. GUY M. McLEAN, Chicago; CHARLES J. DAVIS, Deerfield. To Post-Graduate Hospital, for a course of instruction in urology and dermatology, Lieut. GEORGE E. O'GRADY, Chicago.

To Panama Canal Department, for assignment to duty, from Fort Benjamin Harrison, Lieut. OSCAR W. MICHAEL, Muncie.

To Selfridge Field, Mount Clemens, Mich., for duty, from Fort Benjamin Harrison, Lieut. HARRY E. BROWN, Peoria.

To St. Louis, School of Head Surgery, Washington University, for a three weeks' course of instruction, from Fort Benjamin Harrison, Lieut. EDWIN W. HIRSCH, Chicago; from Fort Riley, HUDSON McB. GILLIS, Woodriver.

Honorably discharged from the Medical Reserve Corps, Lieut. CLARENCE J. MINER, Galesburg.

Indiana

To Austin, Texas, Military School of Aeronautics, for duty, from Fort Benjamin Harrison, Lieut. BYRON J. PETERS, Kokomo.

To Camp American University, Washington, D. C., for duty, from Allentown, Pa., Lieut. LLOYD A. ELLIOT, Elkhart.

To Camp Beauregard, Alexandria, La., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. CHARLES F. VOIGHT, New Albany.

To Camp Custer, Battle Creek, Mich., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieuts. HARRY H. WARD, Coalmont; JULIUS J. GROSVENOR, Richmond.

To Camp Grant, Rockford, Ill., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis from Fort Benjamin Harrison, Lieut. NOAH W. CLARK, Rossville.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Lieut. JOHN W. BALLARD, Logansport.

To Camp Mills, Garden City, L. I., N. Y., for duty in the base hospital, from Fort Oglethorpe, Lieut. FRANK A. BRAYTON, Indianapolis.

To Camp Pike, Little Rock, Ark., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Capt. ALLEN HAMILTON, Fort Wayne.

To Camp Stuart, Newport News, Va., for duty, from Allentown, Pa., Lieut. JAMES G. KIDD, Roann.

To Fairfield, Ohio, for duty on the Wilbur Wright Field, from Fort Benjamin Harrison, Lieut. CARLOS C. ROZELLE, La Grange.

To Fort Benjamin Harrison, for a special course of instruction in tuberculosis examination, Lieut. DORSEY D. METCALF, Fort Wayne.

To Fort McHenry, Md., U. S. Army General Hospital No. 2, for temporary duty, from Fort Oglethorpe, Lieut. JAMES M. SHIELDS, Seymour.

To Fort Oglethorpe, for duty as an instructor, from Fort Benjamin Harrison, Major FREDERICK A. TUCKER, Noblesville.

To Fort Riley, Kan., for duty as an instructor, from Fort Benjamin Harrison, Lieut. MAURICE H. KREBS, Huntington.

To Mineola, L. I., N. Y., for duty, from Fort Benjamin Harrison, Lieuts. WALDO C. FARNHAM, DONALD D. JOHNSTON, Fort Wayne.

To New York City, Cornell Medical College, for a course of instruction in military roentgenology, from Fort Benjamin Harrison, Lieuts.

AARON M. WINKELPLECK, Alfordsville; THOMAS W. MORGAN, Spartanburg.

To Pittsburgh, for a course of instruction on fractures, and on completion of this course to proceed to Fort Benjamin Harrison for temporary duty, from Fort Benjamin Harrison, Capt. JOHN A. MARTIN, Indianapolis.

To Rockefeller Institute, for a course of instruction, and on completion of this course to report to Roosevelt Hospital for a further course of instruction, from Army Medical School, Lieut. BROWN S. McCLINTIC, Peru.

To St. Louis, Washington University, for a course of intensive training in head surgery, from Fort Benjamin Harrison, Capt. GEORGE B. BREEDLOVE, Martinsville; Lieut. FRED G. EBERHARD, South Whitley.

To Walter Reed General Hospital, Takoma Park, Washington, D. C., for duty, from Gettysburg, Pa., Lieut. ARYINE E. MOZINGO, Tipton.

To Washington, D. C., for duty with Repair Shop Unit No. 303, from Fort Benjamin Harrison, Lieuts. HENLY H. HUBBARD, Boswell; HOMER E. LINE, Chili.

To his home and honorably discharged from the Medical Reserve Corps on account of being physically disqualified for active service, from Camp Grant, Capt. EDDIE DEB. THIXTUM, Indianapolis; honorably discharged from the Medical Reserve Corps, from Fairfield, Ohio, Lieut. EARL D. JEWETT, St. Paul.

Iowa

To Army Medical School, Washington, D. C., for a course of instruction, Lieut. JOHN E. KILEY, Valley Junction.

To Camp Custer, Battle Creek, Mich., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. HENRY I. McPHERRIN, Perry.

To Camp Dix, Wrightstown, for temporary duty in the base hospital, Capt. ALDEN H. HOOVER, Des Moines.

To Camp Dodge, Des Moines, for duty in connection with orthopedic work, Capt. FRANCIS LA PIANA, Des Moines; for duty, Lieut. CLYDE L. VAN PATTEN, Anamosa.

To Camp Grant, Rockford, Ill., for duty in the base hospital, Lieut. ELMER J. LAMBERT, Ottumwa.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. FREDERICK E. KELLER, Huxley.

To Camp Lewis, American Lake, Washington, for duty in the base hospital, Capt. MARCUS C. TERRY, Brighton.

To Fort Riley, Kan., for duty with Hospital Train No. 25, Lieut. JOHN F. LOOSBROCK, Fort Des Moines.

To New York City and Philadelphia, for duty in connection with physical examining units, Aviation Section, Signal Corps, and on completion to return to his proper station, Major EUGENE R. LEWIS, Dubuque.

Kansas

To Army Medical School, Washington, D. C., for a course of instruction, Lieuts. EDMUND A. LODGE, Erie; RAYMOND O. DART, Kansas City; BENJAMIN F. FRAZER, Osawatomie.

To Camp Funston, Fort Riley, for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, Lieut. CLARK W. ZUGG, Great Bend.

To Camp Meade, Annapolis Junction, Md., for duty as a member of a board of medical officers for the special examination of tuberculosis, from Camp Greene, Lieut. JACOB H. HALDEMAN, Paola.

To St. Louis, School of Head Surgery, Washington University, for three weeks' course of instruction, from Fort Riley, Lieuts. CLARENCE C. HARVEY, Emporia; JESSE D. COOK, Topeka.

Kentucky

To Camp Funston, Fort Riley, Kan., Eighty-Ninth Division, Lieutenant LESLIE, Lockport.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Lieut. HENRY C. T. RICHMOND, Louisville.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. OTTO E. JOHNSON, Lebanon Junction.

To Camp Pike, Little Rock, Ark., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. FRANK B. DEWITT, Rockport.

To Hoboken, N. J., for assignment to duty, from Fort Benjamin Harrison, Lieut. ALBERT E. HOLMES, Louisville.

To Honolulu, Hawaii, to the Commanding General, Hawaiian Department, for duty, from Camp Funston, Lieut. THOMAS R. GRIFFIN, Somerset.

To Panama Canal Department, for assignment to duty, from Fort Benjamin Harrison, Lieut. CHARLES C. PHILLIPS, Owensboro.

To Washington, D. C., St. Elizabeth's Hospital, for intensive training in his specialty, from Fort Oglethorpe, Capt. MALCOLM H. YEAMAN, Henderson.

To his home and honorably discharged from the Medical Reserve Corps on account of being physically disqualified for active service, from Camp Lee, Capt. DAVID P. CROCKETT, Hardy; Lieut. MILLARD D. HOSKINS, Varilla; *to his home,* from Fort Oglethorpe, Lieut. EDWARD STUMBO; *to the inactive list of the Medical Reserve Corps,* from Fort Riley, Lieut. FINIS LONDON, Woodburn.

Louisiana

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. WILLIAM R. STRANGE, New Orleans.

Honorably discharged from the Medical Reserve Corps, from Fort Riley, Lieut. PRENTISS E. PARKER, Bourg.

Maine

To Camp Lee, Petersburg, Va., for duty, examining troops in nervous and mental diseases, from Allentown, Pa., Lieut. DUDLEY C. KALLOCH, Portland.

To Camp Sherman, Chillicothe, Ohio, for temporary duty in the base hospital, from Camp Shelby, Capts. WARREN E. KERSCHNER, Bath; from Fort Snelling, EDWARD S. ABBOT, Bridgton.

To Hoboken, N. J., for assignment to duty, from Fort Levett, Maine, Capt. FRED T. KOYLE, Fort Levett.

Maryland

To Camp Jackson, Columbia, S. C., for duty, from Fort Oglethorpe, Lieut. MILNOR BORTNER, White Hall.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty in the quartermaster's training camp, from Fort Oglethorpe, Lieut. JOHN M. ELDERDICE, Salisbury.

To Camp Mills, Garden City, L. I., N. Y., 41st Division, from Fort Oglethorpe, Lieut. SAMUEL J. PRICE, Queenstown, Md.

To Camp Taylor, Louisville, Ky., for duty, from Army Medical School, Lieut. SAMUEL A. WHITE, Baltimore.

To Camp Wheeler, Macon, Ga., 31st Division from Fort Oglethorpe, Lieut. RICHARD E. YELLETT, Fallston.

To Hoboken, N. J., for assignment to duty, from Fort Oglethorpe, Lieut. JOHN R. DOWNES, Preston.

To his home and honorably discharged from the Medical Reserve Corps, on account of being physically disqualified for active service, from Fort Oglethorpe, Lieuts. HARRY DIEBEL, Baltimore; from Camp Mills, JOSEPH W. LONG, Walkersville.

Massachusetts

To Army Medical Schocol, Washington, D. C., for the required course of instruction, Lieut. ADOLPH G. SCHNACK, Cambridge Mass.

To Belleville, Ill., Scott Field, for duty, from Fort Benjamin Harrison, Lieut. DOLOR I. BEAUPRE, Holyoke.

To Boston, Mass., for a course of instruction in military roentgenology, Lieut. JOHN W. LEDBURY, Uxbridge; for a course of instruction in orthopedic work, Lieut. JOHN B. WEBSTER, Boston.

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. ROSS GOLDEN, Boston.

To Camp Devens, Ayer, Mass., for duty in the base hospital, from Fort Benjamin Harrison, Lieut. CHANNING FROTHINGHAM, JR., Boston.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Lieuts. WILLIAM J. DILLON, Springfield; WILLARD P. STAPLETON, Worcester; from Camp Devens, VINCENT J. DIMEUTO, Boston.

To Camp Kelly, San Antonio, for duty, from Fort Oglethorpe, Lieut. WILLIAM F. MacKNIGHT, Fall River.

To Camp Lewis, American Lake, for duty in the base hospital and for cardiovascular examinations in the camp, Lieut. WILLIAM J. KERR, Boston.

To Hoboken, N. J., for assignment to duty, from Fort Benjamin Harrison, Lieuts. WERNER HILTPOLD, Easthampton; WILLIAM F. LEMAIRE, Lynn; WILLARD W. LEMAIRE, Worcester.

To Fort Oglethorpe, for duty as an instructor from Fort Benjamin Harrison, Lieut. WILLIAM R. OHLER, Brookline.

To Fort Riley, Kansas, for duty as an instructor, from Fort Benjamin Harrison, Capts. JOHN D. PETERS, Great Barrington; for duty with the 92nd Division, from Fort Benjamin Harrison, EDWARD B. SIMMONS, Worcester.

To New York City, Rockefeller Institute, for instruction in the therapy of pneumonia, Lieut. WARREN T. VAUGHAN, Boston.

To Philadelphia, Pa., for a course of instruction in orthopedic surgery, Lieut. MARTIN H. SPELLMAN, Whitman.

To St. Louis, Washington University, for a course of intensive training in head surgery, from Fort Benjamin Harrison, Lieut. CHARLES F. CANEDY, Greenfield.

Honorably discharged from the Medical Reserve Corps, for the good of the service, from Camp Doniphan, Lieut. JOHN H. ANDERSON, Brockton.

Michigan

To Army Medical School, for the required course of instruction, Lieut. DON C. BARTHOLOMEW, Detroit.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Capt. EMILE C. HOULE, Negaunee; Lieuts. ROY L. LAIRD, Ann Arbor; MORRELL M. JONES, Detroit; JOSEPH G. KNAPP, Wyandotte; from School of Plastic and Oral Surgery, Washington University, St. Louis, ALBERT S. BARR, Greenville.

To Camp Lee, Petersburg, Va., for duty, from Army Medical School, Lieut. HAROLD E. CLARK, Detroit.

To Camp Pike, Little Rock, Ark., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. RAY L. FELLERS, Detroit.

To Fort Oglethorpe, for duty as an instructor, from Fort Benjamin Harrison, Major SAMUEL C. GURNEY, Detroit; Capt. GEORGE S. FODEN, Highland Park.

To Fort Riley, Kan., 92d Division, for duty from Fort Benjamin Harrison, Major DAVID B. DOWNING, Detroit.

To Langley Field, Hampton, Va., for duty, from Fort Benjamin Harrison, Lieuts. CLAYTON G. WOODBULL, Decker; WILLIAM S. CONNERY, Detroit.

To New York City, Bellevue Hospital, for a course of instruction on fractures and upon completion of this course to proceed to his home and return to the inactive list of the Medical Reserve Corps, from

Rockefeller Institute, Lieut. JOHN T. HODGEN, Grand Rapids; to Cornell Medical College for a course of instruction in military roentgenology, Lieut. THEODORE KOLVOORD, Battle Creek.

To Philadelphia, Pa., for orthopedic instruction, from Army Medical School, Lieut. WILLIS K. WEST, Painesdale.

To Rockefeller Institute, for a course of instruction and upon completion of this course to report to Roosevelt Hospital for a further course of instruction, from Army Medical School, Lieut. ROBERT A. HALE, Ann Arbor.

To Selfridge Field, Mt. Clemens, Mich., for duty, from Fort Benjamin Harrison, Capt. HOWARD W. STUCH, Allegan.

To St. Louis, Washington University, for a course of intensive training in head surgery, from Fort Benjamin Harrison, Capt. WILLIAM C. McCUTCHEON, Cassopolis.

Honorably discharged from the Medical Reserve Corps on account of being physically disqualified for active service, from Camp Greenleaf, Lieut. GEORGE R. ADKIN, Grand Rapids.

Minnesota

To Camp Grant, Rockford, Ill., 86th Division, for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, Lieut. WILLIAM C. JENSEN, St. Paul.

To Camp Kelly, San Antonio, Tex., for duty, from Fort Oglethorpe, Lieut. SOLOMON F. RUDOLF, Albert Lea.

To Camp Pike, Little Rock, Ark., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. THOMAS G. CLEMENT, Vernon Center.

To Fort Logan H. Roots, Ark., for duty, Lieut. LEON A. WILLIAMS, Slayton.

To Fort Oglethorpe, for a course of instruction, Lieuts. AUVIGNE M. RANDALL, Ashby; KENNETH W. WILDER, Minneapolis.

To Fort Riley, Kan., for duty, Lieuts. HENRY E. DOUGLAS, Hutchinson; PIO BLANCO, Rochester.

To New York City, Cornell Medical College, for a course of instruction in military roentgenology, from Fort Benjamin Harrison; to Rockefeller Institute for instruction in therapy of pneumonia, Lieut. WALTER E. GREMPLER, Minneapolis.

To St. Louis, Mo., School of Head Surgery, Washington University, for a three week's course of instruction, from Fort Riley, Capt. OLIVER E. STEWART, Bricelyn, Lieut. FLOYD W. BURNS, St. Paul.

Mississippi

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. JOHN E. McDILL, Shaw.

To Camp Pike, Little Rock, Ark., for duty, from Camp Dix, Lieut. HARDIE R. DAVIS, North Carrollton.

To Camp Shelby, Hattiesburg, Miss., 38th Division from Camp Greenleaf, Fort Oglethorpe, Capt. AUGUSTUS M. HARRELSON, Newton.

To Chickamauga Park, Ga., Reorganization Camp for duty with the 6th Infantry, from Fort Oglethorpe, Lieut. JESSE D. WESTMORELAND, Taylor.

To Fort Oglethorpe, for a course of instruction, Lieut. GEORGE D. MASON, Clara.

To Jackson, Miss., for the purpose of examining applicants for appointment in the Medical Reserve Corps, and upon completion of this duty, to return to his proper station at Meridian, Miss., Lieut. INMAN W. COOPERS, Meridian.

To St. Louis, Washington University, for a course of intensive training in head surgery, from Fort Oglethorpe, Lieut. HEWITT JOHNSTON, Biloxi.

To Washington, D. C., for duty with Repair Shop Unit No. 303, from Fort Oglethorpe, Lieut. CHARLES E. LEHMBERG, Artesia.

Honorably discharged from the Medical Reserve Corps, from Camp Meade, Lieut. THOMAS W. REAGAN, Union.

Honorably discharged from the Medical Reserve Corps of the Army, from Fort Des Moines, Ia., Lieut. ROBERT L. JOHNSON, Algoma.

To his home and returned to the inactive list of the Medical Reserve Corps, from Fort Oglethorpe, Lieut. GEORGE J. MANCILL, Indianola.

Missouri

To Camp American University, Washington, D. C., for duty, from Allentown, Pa., Lieut. WILFORD A. FAIR, Pleasant Hill.

To Camp Cody, Deming, N. M., for duty, from Fort Riley, Kan., Capt. LINDAY S. MILNE, Kansas City.

To Camp Custer, Battle Creek, Mich., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. JAMES B. BIGGS, Bowling Green.

To Camp Funston, Kan., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, Capt. KURT STUMBER, St. Charles.

To Camp Grant, Rockford, Ill., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis from Fort Benjamin Harrison, Lieut. JACOB J. KENNEDY, Frankford.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, from School of Plastic and Oral Surgery, Washington University, St. Louis, Mo., Capt. CHARLES A. VOSBURGH, St. Louis; for a course of instruction, Lieuts. HALBERT R. HILL, Bachelor; JOSEPH F. BREDECK, St. Louis.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. JOHN D. ROBINSON, Belgrade.

To Camp Meade, Annapolis Junction, Md., for duty as members of a board of medical officers for the special examination of the command for tuberculosis, from Camp Green, Lieut. DELANE S. CALHOUN, St. Louis.

To Camp Wheeler, Macon, Ga., for temporary duty in the base hospital, from Fort Oglethorpe, Lieut. MARTIN H. POST, St. Louis.

To Fort Logan H. Roots, Ark., for duty, Capt. WILLIAM T. J. BAILEY, Caseville.

To Fort Oglethorpe, for a course of instruction, Lieut. LUTHER H. WALLON, Summerville.

To Fort Riley, for duty with Hospital Train No. 25, Lieut. MORGAN L. CLINT, Meadville.

To New Orleans, La., Charity Hospital for a course of instruction on fractures and on completion of this course to proceed to Fort Bliss, Texas, for temporary duty, from Fort Bliss, Capt. HAROLD P. KUHN, Kansas.

To New York City, Bellevue Hospital for a coures of instruction on fractures and on completion of this course to proceed to Fort Snelling, Minn., for temporary duty in the base hospital, from Fort Snelling, Capt. ROBERT BURNS, JR., St. Louis.

To New York City, Cornell Medical College, for a course of instruction in military roentgenology, from Fort Riley, Kan., Lieut. EVERETT R. DEWEESE, Kansas City; to Rockefeller Institute for a course of insurrection in the treatment of pneumonia, and on completion of this course to his proper station, from Camp MacArthur, Lieut. HERBERT S. LANGSDORF, St. Louis.

To Philadelphia, Pa., Eddyston, Pa., New York City, Hoboken, N. J., Hastings-on-Hudson, N. Y., Bridgeport, Conn., New Haven, Conn., Hartford, Conn., Boston, Mass., Lowell, Mass., St. Albans, Vt., Albany, N. Y., Utica, N. Y., Ilion, N. Y., Watertown, N. Y., St. Louis, Mo., East Alton, Ill., Cincinnati, Ohio, for the purpose of making special inspections of the sanitary conditions in munition plants and upon completion of this duty will return to his proper station, Lieut. FRANK L. MORSE, St. Louis.

To St. Louis, Mo., Aviation Section, Signal Corps, as a member of the physical examining unit, Lieut. JOSEPH J. REILLY, St. Louis. To Washington University, for a course of intensive training in head surgery, from Fort Riley, Lieuts. JOHN R. ELLIOT, Clarksdale; Edwin C. FUNSCH, ROY JOHNSON, St. Louis.

Montana

To Camp Dodge, Ia., for duty at the remount station, Lieut. LEO C. LECLAR, Twin Bridges.

To St. Louis, Mo., School of Head Surgery, Washington University, for a three weeks' course of instruction, from Fort Riley, Lieuts. KARL A. SNYDER, Great Falls; ROBERT L. OWENS, Hamilton.

Nebraska

To Camp Beauregard, Alexandria, La., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis from Fort Oglethorpe, Lieut. TORRENCE C. MOYER, Lincoln.

To Camp Funston, Fort Riley, Kan., 59th Division for duty, from Fort Riley, Lieut. CHARLES P. BRENN, Western.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Lieut. FREDERICK J. WURTELE, North Platte.

To Camp Meade, Annapolis Junction, Md., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Camp Greene, Lieut. WILLIAM N. ANDERSON, Omaha.

To Fort Leavenworth, Kan., for duty, Capt. ELLIS H. WHITEHEAD, Osmond.

To Fort Riley, Kan., for duty in the base hospital, Lieut. WILLIAM C. BARTLETT, Alma.

Nevada

To Camp Gordon, Atlanta Ga., for duty, from Army Medical School, Lieut. JAMES P. CRAWFORD, Mina.

New Hampshire

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Lieut. GEORGE F. DWINELL, Manchester.

To Fort Oglethorpe, for duty as an instructor from Fort Benjamin Harrison, Lieut. JOHN A. DREW, Kumney.

To St. Louis, Washington University, for a course of intensive training in head surgery, from Fort Benjamin Harrison, Lieuts. JOHN J. OSTERHOUT, Keene; JOHN B. WARDEN, Whitefield.

New Jersey

To Camp Devens, Ayer, Mass., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Walter Reed General Hospital, Lieut. GRANT THORBURN, Newark.

To Camp Dix, Wrightstown, N. J., for duty, from Fort Ontario, Capt. WIDMER E. DOREMUS, Newark; Lieut. WALTER A. HICKMAN, Princeton.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. JOHN L. MEEKER, Newark.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. CLARENCE LEF. VREELAND, Pompton Lakes.

To Camp Lee, Petersburg, Va., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis from Fort Oglethorpe, Lieut. HOWARD S. SMITH, Newark.

To Camp Mills, for duty to examine the troops who have not already been examined for tuberculosis and cardiovascular abnormalities, and on completion of this duty to return to his proper station, from Camp Upton, Lieut. GEORGE B. EMORY, Newark.

To Camp Pike, Little Rock, Ark., for duty as a member of a board for the special examination of the command for tuberculosis, from Camp Stuart, Newport News, Va., Lieut. WILLIAM H. HAINES, Audubon.

To Camp Upton, Yaphank, L. I., N. Y., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Walter Reed General Hospital, Takoma Park, Lieut. GEORGE B. EMORY, Newark.

To Fort Myer, Va., for duty, Capt. ROBERT E. SOULE, Newark.

To Fort Oglethorpe, for a course of instruction, Capt. GEORGE B. GALE, Newark; Lieut. JOHN L. LUND, Perth Amboy.

To New York City, Bellevue Hospital, for a course of instruction on fractures and on completion of this course to proceed to Wrightstown, N. J., for temporary duty in the base hospital, Lieut. LOUIS E. POOLE, West Hoboken.

To Tenafly, N. J., for duty as adjutant with venereal hospital, from Fort Oglethorpe, Capt. BLASE COLE, Newton.

To Walter Reed General Hospital, Takoma Park, D. C., for a special course of instruction in tuberculosis examinations, Capt. MAURICE ASHER, Newark; Lieuts. GRANT THORBURN, Newark; SAMUEL R. FAIRCHILD, Penngrove.

To Washington, D. C., for duty with Repair Shop Unit No. 302, for duty, from Allentown, Pa., Lieut. CLAUDE W. THOMAS, Woodstown.

To his home and to the inactive list of the Medical Reserve Corps on account of being physically disqualified for active service, from Camp Meade, Lieut. L. LAWRENCE H. ROGERS, Trenton.

New York

To Army Medical School, Washington, D. C., for a course of instruction, Lieuts. HARRY B. HANSEN, WILLIAM P. SMALE, New York City; from Gettysburg, Pa.; Lieut. JOSEPH PRICE, New York City; for orthopedic work, JACOB UNDANG, Brooklyn.

To Boston, Mass., and report in person to the Commanding General Northeastern Dept., for duty, from Fort Michie, Lieut. RUEL B. KARIOBE, New York City; to Boston City Hospital, for a course of instruction on fractures and on completion of this course to proceed to Camp Cody, Deming, N. M., for temporary duty in the base hospital, from Camp Bartlett, Lieut. HENRY E. McGARVEY, Bronxville.

To Camp Beauregard, Alexandria, La., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Oglethorpe, Capt. JAMES C. HARKENS, New York City.

To Camp Custer, Battle Creek, Mich., for duty, from Psychopathic Hospital, Ann Arbor, Mich., Capt. GEORGE F. MILLS, Oneida.

To Camp Devens, Ayer, Mass., for duty, from Camp Sherman, Lieuts. CHARLES E. CONGDON, Buffalo; for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Walter Reed General Hospital, Lieut. ADELBERT C. ABBOTT, Syracuse.

To Camp Greene, Charlotte, N. C., for duty, to be relieved of his present duties, Lieut. HERMANN ELWYN, New York City.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Capt. JAMES F. NAGLE, New York City; Lieuts. VINCENT J. T. O'NEILL, Highland Falls; ROWLAND P. BLYTHE, CHARLES G. DARLINGTON, GEORGE A. KOENIG, WALTER M. KRAUS, CHARLES H. NAMMACK, MILTON W. PLATT, BERNARD L. ROBINS, CORNELIUS J. TYSNO, JOHN H. WYCKOFF, New York City; WARREN C. FARGO, Warsaw.

To Camp Jackson, Columbia, S. C., for duty in the base hospital, from Camp Mills, Capt. FRANKLIN B. VAN WART, Brooklyn.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieuts. HENRY McI. MOORE, New York City; MACY L. LERNER, Rochester.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Capt. RAYMOND F. LONGACRE, New York City; Lieut. BEEKMAN J. DELATOUR, New York City.

To Camp Lee, Petersburgh, Va., for consultation with the division surgeon and base hospital surgeon in connection with matters pertaining to nervous and mental diseases, and upon completion of this duty to his proper station, from Camp Greene, Major PEARCE BAILEY, New York City; for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. SIDNEY TRATTNER, New York City.

To Camp Logan, Houston, Texas, for duty in the base hospital, Lieut. LOUIS D. MINSK, New York City.

To Camp Meade, Annapolis Junction, for duty, from Fort Ontario, Capt. WILSON C. WOOD, Madison Barracks, N. Y.; for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Camp Greene, Capt. GEZA KREMER, New York City; Lieut. THOMAS F. ELLIS, New York City.

To Camp Mills, for duty to examine the troops who have not already been examined for tuberculosis and cardiovascular abnormalities, and upon completion of this duty to return to his proper station, from Camp Upton, Lieuts. HENRY C. DREW, Brooklyn; EDWIN F. SAMSON, New York City; for examination, Lieut. ALBERT C. MARGULIES, New York City.

To Camp Pike, Little Rock, Ark., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. ROBERT R. McCULLY, Auburn.

To Camp Stuart, Newport News, Va., for duty, from Allentown, Pa., Lieut. MARK F. HEALY, New York City.

To Camp Upton, Yaphank, L. I., N. Y., for duty, from Fort Riley, Kan., Lieut. ALBERT C. DURAND, Ithaca.

To Chicago, Ill., Neurological School, Presbyterian Hospital, for intensive training in brain surgery, from Orthopedic School, Boston, Mass., Major CHARLES HENNINGTON, Rochester.

To Concentration Camp, Garden City, L. I., N. Y., for duty, from Camp Mills, Lieut. ROBERT H. FOWLER, New York City.

To Fort Benjamin Harrison, Indianapolis, for the purpose of taking the examination for admission to the medical corps, and upon completion of this duty to return to his proper station, from Fort Wayne, Mich., Lieut. JOHN J. LANCER, New York City.

To Fort Oglethorpe, for duty as an instructor, from Fort Benjamin Harrison, Major FREDERIC W. LOUGHRAN, New York City; Capt. HERBERT L. CELLER, New York City; Lieut. VICTOR C. VON UNRUH, New York City; for duty with Hospital Train No. 23, Lieut. HAROLD B. JOHNSON, Buffalo.

To Fort Riley, Kansas, for duty with Hospital Train No. 24, Lieut. WILLIAM E. McCORMACK, Brooklyn.

To Fort Sill, Okla., U. S. School for Aerial Observers, for duty, from Aviation Section, Signal Corps, Pittsburgh, Pa., Lieut. EDWIN S. INGERSOLL, Rochester.

To Langley Field, Hampton, Va., for duty, from Fort Benjamin Harrison, Lieuts. WARTHER C. A. STEFFEN, College Point; EDWARD L. HAZELTINE, Jamestown.

To Mineola, L. I., N. Y., for duty, from Fort Benjamin Harrison, Lieuts. PAUL B. BETOWSKI, Bath; DANIEL M. MacDONALD, New York.

To New York City, Bellevue Hospital, for a course of instruction on fractures, and upon completion of this course to proceed to Fort Ontario, N. Y., for temporary duty, from Fort Ontario, Major RALPH A. STEWART, New York City. *To proceed to Camp Sherman*, Chillicothe, Ohio, for temporary duty, Capt. CHARLES W. HOYT, Rochester; from Rockefeller Institute, Capt. ETHAN F. BUTLER, Yonkers. *To Cornell Medical College*, for a course of instruction in military roentgenology, from Fort Benjamin Harrison, Lieut. BERNARD S. STRAIT, Penn Yan. *To Post-Graduate Hospital*, for a course of instruction in urology and dermatology, Lieuts. SAMUEL PARNASS, Brooklyn; WILLIAM G. PHILLIPS, Brooklyn. *To U. S. Army General Hospital No. 1*, for temporary duty, Lieut. ROYAL A. SCHAAF, New York City.

To Philadelphia, Pa., for a course of instruction on fractures, and upon completion of this course to proceed to Camp Jackson, for temporary duty in base hospital, from Allentown, Pa., Lieut. JOSEPH S. BALDWIN, Brooklyn.

To Pullman, Ill., for duty with Hospital Train No. 1, from Fort Benjamin Harrison, Lieut. GEORGE B. REITZ, Brooklyn.

To Rockefeller Institute, New York City, for a course of instruction, and upon completion of this course to report to Bellevue Hospital for a further course of instruction, Major GEORGE B. WALLACE, New York City. Upon completion of this course to proceed to Camp Sheridan for temporary duty in the base hospital, Capt. EDWIN W. PEET, New York City.

To St. Louis, Mo., School of Plastic and Oral Surgery, Washington University, for duty, to the military director of the school, Capt. ROBERT T. FRANK, New York City; from Fort Benjamin Harrison, Lieut. JAMES T. HARRINGTON, Poughkeepsie.

To Syracuse, N. Y., for duty as medical member of examining board, recruiting officer and temporary officer in charge of physical examining unit, from Examining Unit, Aviation Section, Signal Corps, New York City, Lieut. FEDOR L. SENGER, Brooklyn.

To Walter Reed General Hospital, Takoma Park, D. C., for a special course of instruction in tuberculosis examinations, Capts. THEODOR J. ABBOTT, New York City; JOSEPH R. CULKIN, Rochester; STEPHEN A. MAHADY, Utica; Lieuts. DANIEL R. ROBERT, LOUIS D. STERN, Brooklyn; EDWARD P. EGLEE, Flushing; CLYDE D. OATMAN, Poolville; for duty in the urologic division, LEO C. DuBOIS, Beacon.

Honorably discharged from the Medical Reserve Corps, on account of being physically disqualified for active service, Lieut. ALBERT C. MARGULIES, Brooklyn; from Fort Benjamin Harrison, Lieut. JOSEPH T. SLONIMSKY, New York City; from Fort Oglethorpe, Lieut. JOHN W. MUNRO, Syracuse.

To his home and the inactive list of the Medical Reserve Corps, Capt. GEZA KREMER, New York City; Lieut. FRANK E. MILLER, New York City.

North Carolina

To Camp Beauregard, Alexandria, La., 39th Division, from Fort Oglethorpe, Lieut. RANDOLPH E. WATTS, Oriental.

To Camp Custer, Battle Creek, Mich., for duty, from Army Medical School, Lieut. MALTHUE R. FREEMAN, Bailey.

To Camp Jackson, Columbia, S. C., for active service, Lieut. ALEXANDER F. JONES, Ararat.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Oglethorpe, Lieut. JOHN L. MOORE, Wendell.

To Camp Lee, Petersburg, Va., 80th Division, for duty, from Fort Oglethorpe, Lieut. BENJAMIN F. CLIFF, East Flat Rock.

To Camp Meade, Annapolis Junction, Md., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Camp Green, Lieut. FREDERICK B. SPENCER, Salisburg.

To Camp Sevier, Greenville, S. C., for duty, from Fort Oglethorpe, Lieut. THOMAS J. SUMMEY, Brevard.

To Fort Oglethorpe, Ga., for the required course of instruction, Lieut. OSCAR W. KING, Mooresville.

To New York City, Bellevue Hospital, for a course of instruction on fractures, and upon completion of this course to Camp Sheridan for temporary duty in the base hospital, from Camp Sheridan, Capt. EVERETT A. LOCKETT, Winston-Salem.

To Walter Reed General Hospital, Takoma Park, D. C., for a course of instruction in tuberculosis examination, Lieut. JOHN DONNELL, Charlotte.

To his home and the inactive list of the Medical Reserve Corps, from Camp Stanley, Leon Springs, Texas, Lieut. JAMES N. MITCHNER, Kingston.

To his home and the inactive list of the Medical Reserve Corps, on account of being physically disqualified for active service from Camp

Gordon, Lieuts. CHARLES Z. CHANDLER, Sylvia; from Camp Meade, Lieut. EDWARD S. KING, Sweethome.

Honorably discharged from the Medical Reserve Corps, on account of being physically disqualified for active service, from Camp Sevier, Lieut. JAMES M. TEMPLETON, Cary.

North Dakota

To Boston, Mass., General Hospital for a course of instruction on fractures, and upon completion of this course to proceed to Fort Oglethorpe for a course of instruction, Major ERIC P. QUAIN, Bismarck.

Ohio

To Army Medical School, for a course of instruction, Lieut. JOHN D. NOURSE, Kenton.

To Boston, Mass., General Hospital, for a course of instruction on fractures, and upon completion of this course to proceed to Camp Sherman, Chillicothe, Ohio, for temporary duty in the base hospital, Lieut. GEORGE M. LOGAN, Akron.

To Camp Custer, Battle Creek, Mich., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieuts. IVAH J. RANSBOTTOM, Coldwater; CHARLES R. DEEDS, Dalton.

To Camp Gordon, Atlanta, Ga., 82d Division, for duty, from Fort Oglethorpe, Lieut. HERMAN L. CRARY, Letart Falls.

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, Lieuts. ADOLPHUS W. FOERTMEYER, Cincinnati; HARRY E. WILSON, Martins Ferry.

To Camp Pike, Little Rock, Ark., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, Lieut. GEORGE L. HAEFELE, Cleveland.

To Camp Sherman, Chillicothe, Ohio, for duty in the base hospital, Lieut. MELVILLE D. AILES, Warren.

To Camp Stuart, Newport News, Va., for duty, from Allentown, Pa., THOMAS RICHARD KENNERDELL, Cleveland.

To Camp Taylor, Louisville, Ky., for temporary duty at the base hospital, from Fort Benjamin Harrison, Lieut. LAUREN N. LINDENBURGER, Troy.

To Canal Zone, to report in person to the Commanding General, Panama Dept., for duty, from Fort Benjamin Harrison, Indiana, Lieuts. RALPH H. SILL, Cleveland; CARLTON C. STOKES, Port Clinton.

To Chicago, Ill., Neurological School, Presbyterian Hospital, for intensive training in brain surgery, from Orthopedic School, Boston, Mass., Lieut. CHARLES M. PAUL, Cincinnati.

To Fort Benjamin Harrison, Indiana, for a course of instruction in the hospital on fractures, and upon completion of this course to proceed to Louisville, Ky., for temporary duty in the base hospital, from Camp Taylor, Lieuts. DE ENNA D. DE NEEN, Cincinnati; for a special course of instruction in tuberculosis examining, JOSEPH M. ULRICH, Akron; IRWIN W. MAYBERRY, Scott Town; for duty with Hospital Train No. 2, CLYDE K. STARTZMAN, Bellefontaine; for duty with Hospital Train No. 3, HARVEY N. TRUMBULL, Woodville.

To Fort Oglethorpe, Ga., for duty in the provisional base hospital, from Fort Benjamin Harrison, Lieuts. OTTO N. WARNER, Conneaut; for a course of instruction, FRANK B. SNODGRASS, Kenton.

To Mineola, L. I., N. Y., for duty, from Fort Benjamin Harrison, Lieuts. RUDOLPH S. REICH, JOHN W. TIPPIE, Cleveland; CLARENCE J. SCHIRACK, Coldwater; HERMAN G. ROSENBLUM, Toledo; JAMES S. MARINER, Youngstown.

To Rockefeller Institute, New York City, for a course of instruction in the therapy of pneumonia, Lieuts. HENRY J. JOHN, Cleveland; from Allentown, Pa., JOSEPH E. McCLELLAND, Cleveland.

To Selfridge Field, Mount Clemens, Mich., for duty, from Fort Benjamin Harrison, Lieut. JOHN A. TRUE, Port Clinton.

To St. Louis, Mo., School of Head Surgery, Washington University, for a three weeks' course of instruction, from Fort Riley, Lieuts. WILLIAM S. NICHOLS, Cleveland; ROY F. JOLLEY, Richwood.

To Washington, D. C., for duty as orthopedic instructor, Major HERBERT D. MADDOX, Cincinnati.

Honorably discharged from the Medical Reserve Corps on account of being physically disqualified for active service, from Camp Lewis, Capt. LOUIS L. SYMAN, Springfield.

Oklahoma

To Camp Devens, Ayer, Mass., for duty, from Army Medical School, Lieut. DAVID D. PAULUS, Oklahoma City.

To Camp Doniphan, Fort Sill, Okla., for duty, from base hospital, Fort Sill, Okla., Lieut. JOSEPH M. HANCOCK, Muskogee.

To Camp Jackson, Columbia, S. C., for duty, from Army Medical School, Lieut. PHILIP L. COULTER, Tulsa.

To Fort Sill, Okla., School of Aerial Observers, for duty with the 3d Balloon Squadron, Lieut. HENRY DEW. SHANKLE, Hastings.

To Philadelphia, Pa., University Hospital, for a course of instruction on fractures, and upon completion of this course to proceed to Fort Sam Houston, Texas, for temporary duty; from Fort Sam Houston, Lieut. ABRAHAM L. BLESH, Oklahoma City.

To his home and the inactive list of the Medical Reserve Corps, from Camp Mills, Major LEWIS A. CONNER, Coalgate; from Camp Cody, Lieut. CHARLES E. HOUSER, Vici; from Camp Bowie, Lieut. ALBERT N. EARNEST, Muskogee.

Oregon

To Army Medical School, Washington, D. C., for a course of instruction, Lieut. ROBERT A. SHERWOOD, Portland.

To Camp Beauregard, for duty as plastic and oral surgeon, section of surgery of the head, with the base hospital, Capt. JUSTIN M. WAUGH, Hood River.

Pennsylvania

To Aberdeen, Md., for duty, from Fort Benjamin Harrison, Lieut. JAMES L. JUNK, Connellsville.

To Army Medical School, Washington, D. C., for a course of instruction from Fort Oglethorpe, Lieut. SAMUEL R. SKILLERN, Jr., Philadelphia.

To Boston, Mass., City Hospital, for a course of instruction on fractures and on completion of this course to proceed to Camp Beauregard, Alexandria, La., for temporary duty, from Fort Ethan Allen, Vt., Lieut. GEORGE W. MILLER, Norristown.

To Camp Beauregard, Alexandria, La., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. WILLIAM RUOFF, Philadelphia.

To Camp Devens, Ayer, Mass., 76th Division from Fort Oglethorpe, Lieut. JOHN S. ANDERSON, Greensburg; for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Walter Reed General Hospital, Lieut. HARRISON M. STEWART, Mont Alto.

To Camp Dix, Wrightstown, N. J., for duty, from Allentown, Pa., Lieut. WALTER WHITEHOUSE, Marcus Hook.

To Camp Dodge, Des Moines, Ia., for duty, from Army Medical School, Lieut. FRANK S. MATLACK, Philadelphia.

To Camp Gordon, Atlanta, Ga., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Walter Reed General Hospital, Capt. ALBERT P. FRANCINE, Philadelphia.

To Camp Greene, Charlotte, N. C., for duty in the base hospital, from Dept. Laboratory, Atlanta, Ga., Capt. CLAUDE P. BROWN, Glen Olden.

To Camp Greenleaf, for a course of instruction, Lieuts. PHILIP L. HATCH, Coudersport; from Fort Benjamin Harrison, DANIEL E. L. STEDEM, Philadelphia.

To Camp Hancock, Augusta, Ga., Twenty-Eighth Division, from Fort Oglethorpe, Lieut. HOWARD L. FARQUHAR, Pittsburgh.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Shelby, Lieut. ADDISON M. ROTHROCK, Reading; from Fort Oglethorpe, Lieut. ISREAL P. P. HOLLINGSWORTH, West Chester.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieuts. JOHN S. STRUTHERS, Danville; SAMUEL E. LYON, Mount Braddock; Lieuts. M. ROGERS, Philadelphia; JAMES E. JAMES, Plymouth.

To Camp Logan, Houston, Texas, Thirty-Third Division, from Fort Oglethorpe, Lieut. WALTER L. HENDERSON, East McKeesport.

To Camp Meade, Annapolis Junction, Md., for duty as member of a board of medical officers for the special examination of the command for tuberculosis, from Camp Greene, Lieut. JAMES M. McNALL, Wilkinsburg; from Fort Benjamin Harrison, Lieut. WILLIAM H. HERR, Lancaster, for duty, from Allentown; Lieut. CHARLES J. CAVANAGH, Philadelphia.

To Camp Mills, Garden City, L. I., for duty in the base hospital, Major JACK C. GITTINGS, Philadelphia.

To Camp Pike, Little Rock, Ark., for duty, from Army Medical School, Lieut. PAUL M. N. KYLE, Pittsburgh; from Fort Oglethorpe, Lieut. JAMES N. DOUGLAS, Scranton.

To Camp Stuart, Newport News, Va., for duty, from Allentown, Pa., Lieut. DWIGHT E. LONG, Freeburg; from Fort Oglethorpe, Lieuts. FRANK L. KNOX, Claysville; WILLIAM H. HAINES, Thompsontown.

To Camp Taylor, Louisville, Ky., Eighty-Fourth Division, from Fort Oglethorpe, Capt. PETER H. DALE, State College; Lieut. ARTHUR R. GAINES, Altoona.

To Fort Oglethorpe, for duty as an instructor, from Fort Benjamin Harrison, Major THEODORE B. APPEL, Lancaster.

To Chicago, Neurological School, Presbyterian Hospital, for intensive training in brain surgery, and on completion of this course to return to his proper station, from Fort Benjamin Harrison, Capt. LOUIS J. C. BAILEY, Greensburg.

To Essington, Pa., for duty, from Camp Dix, Lieut. ROBERT S. McCOOMBS, Philadelphia.

To Hoboken, N. J., for assignment to duty, from Allentown, Pa., Lieut. JOSEPH W. DENNIN, Philadelphia; from Fort Oglethorpe, Lieuts. WALTER E. LANG, Allentown; HERBERT L. RANSOM, Pittston; CONNELL E. MURRIN, Scranton.

To Mineola, L. I., N. Y., Signal Corps, Aviation School, Hazelhurst Field, for duty, from Middletown, Pa., Lieut. WILLIAM P. McINTOSH, Philadelphia.

To Newport News, Va., for duty, at the Port of Embarkation, from Fort Oglethorpe, Lieut. WILLIAM F. HARRISON, Plains.

To New York City, for the purpose of attending the meeting of the Bureau of Standards on business in connection with the Medical Department, and on completion of this duty will return to his proper station, Major DAVID SILVER, Pittsburgh. *To Bellevue Hospital,* for a course of instruction on fractures, and on completion of this course to proceed to Fort Worth, Texas, Camp Bowie, for temporary duty, in the base hospital, from Camp Bowie, Capt. JAMES G. FLYNN, Ridgway.

To Philadelphia, for duty as a medical member of the examining board and assistant to the recruiting officer from Essington, Pa., Lieut. JOHN P. GALLAGHER, Philadelphia; for a special course of instruction at the School of Plastic and Oral Surgery, from Army Medical School, Lieut. ARTHUR T. HENRICI, Pittsburgh.

To Roanoke, Va., for conference with the Virginia Committee on Medical Defense, and on completion of this duty to return to his proper station in this city, Major HENRY D. JUMP, Philadelphia.

To Rockefeller Institute, for a course of instruction, and on completion of this duty to Roosevelt Hospital for a further course of instruction, from Army Medical School, Capt. JOHN F. McCLOSKEY,

Philadelphia; Lieuts. JOSEPH G. FERNBACH, Philadelphia; ROY L. SCOTT, Sayre.

To St. Louis, Washington University, for a course of intensive training in head surgery, from Fort Oglethorpe, Lieut. THOMAS S. HICKS, Braddock; on completion of this course to report to Camp Greenleaf for a course of instruction, Lieut. WILLIAM BATES, Philadelphia.

To Walter Reed General Hospital, Takoma Park, D. C., for a special course of instruction in tuberculosis examinations, Capt. ELMER G. WEIBEL, Erie; Lieuts. RALPH E. HENRY, Erie; HARRISON M. STEWART, Mont Alto; ABRAHAM TRASOFF, Philadelphia.

To his home and returned to the inactive list of the Medical Reserve Corps, from Fort Oglethorpe, Lieuts. JOHN S. ANDERSON, Greensburg; JOSEPH F. COMERFORD, Philadelphia.

To his home and returned to the inactive list of the Medical Reserve Corps, on account of being physically disqualified for active service, from Fort Oglethorpe, Lieut. LEO DEL. PARRY, Rock Glen; from Walter Reed General Hospital, Lieut. FLOYD D. LOHR, Derry; from Fort Benjamin Harrison, Lieut. JOSEPH S. MURRIN, Carbondale.

Porto Rico

To Camp Stuart, Newport News, Va., for duty, from Fort Oglethorpe, Lieut. WILLIAM R. GALBREATH, San Juan.

Rhode Island

To Camp MacArthur, Waco, Texas, for duty in connection with orthopedic examinations in the division and base hospital, Lieut. JOSEPH E. RAIA, Providence.

To Walter Reed General Hospital, for a special course of instruction in tuberculosis examinations, Lieut. NORMAN B. COLE, Providence.

South Carolina

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. THOMAS C. GALLOWAY, Columbia.

To Camp Lee, Petersburg, Va., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. THOMAS O. WALKER, Greer.

To Camp Meade, Annapolis Junction, Md., for temporary duty in the base hospital, from Camp Greenleaf, Lieut. HERBERT HARRIS, Andlison.

To Camp Pike, Little Rock, Ark., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. JAMES M. OLIVER, Orangeburg.

To Mineola, L. I., N. Y., for duty, from Fort Benjamin Harrison, Lieut. CHARLES C. FISHBURNE, Scotia.

Tennessee

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty, from Fort Riley, Capt. JAMES H. SMITH, Trimble; Lieut. GRANVILLE I. WALKER, Gillases Mills.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. GUY McC. REESER, JR., Church Hill.

To Camp Pike, Little Rock, Ark., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. MAURICE L. CONNELL, Ridgetop.

To Camp Upton, Yaphank, L. I., N. Y., for duty, from Army Medical School, Lieuts. GEORGE F. AYCOCK, Nashville; MANTON L. SHELBY, Woodlawn.

To Canal Zone, to report in person to the commanding general, Panama Department, for duty, from Fort Benjamin Harrison, Lieut. WILLIAM E. BOYCE, Flat Woods.

To Fort Bayaho, N. M., for duty, Lieut. FRANK B. BREWER, Nashville,

To New York City, Bellevue Hospital, for a course of instruction on fractures and on completion of this duty to proceed to Fort Niagara, N. Y., for temporary duty, from Camp Mills, Lieut. WILLIAM R. SEARS, Lebanon.

To St. Louis, Washington University, for a course of intensive training in head surgery, from Fort Oglethorpe, Lieut. DORSEY T. GOULD, Lawrenceburg.

Honorably discharged from the Medical Reserve Corps, from Camp Pike, Lieut. WILLIAM G. BUNDRANT, Lawrenceburg.

Texas

To Army Medical School, Washington, D. C., for a course of instruction, from Brownsville, Texas, Lieut. LUCIUS L. HANDLY, Houston.

To Camp Cody, Deming, N. M., Thirty-Fourth Division, Lieut. JOSEPH V. DOZIER, Menard.

To Camp Hancock, Augusta, Ga., for temporary duty in the base hospital, from Fort Oglethorpe, Capt. WALLACE RALSTON, Houston.

To Camp Jackson, Columbia, S. C., for duty, from Army Medical School, Lieut. WILLIAM L. STARNES, San Antonio.

To Camp MacArthur, Waco, Texas, for duty, Lieut. MARION M. BROWN, Mexia.

To Camp Sevier, Greenville, S. C., to report in person to the commanding general, Thirtieth Division, for active duty, Lieut. EDWIN W. REEVES, Galveston.

To Camp Travis, Fort Sam Houston, Texas, for duty, Lieuts. ARCHIBALD F. CLARK, Fentress; GEORGE W. DOUGLAS, Martindale; ALLEN D. WAGES, Waco.

To Fort Oglethorpe, Field Hospital Co. No. 3, for duty, from Camp Greenleaf, Lieut. JESSE C. McKEAN, Lometa.

To Hoboken, N. J., for transportation to France and on arrival in France to report to the commanding general, American Expeditionary Forces, for duty as roentgenologist, from School of Military Roentgenology, Kansas City, Lieut. DAVIS SPANGLER, Sherman.

To San Antonio, Texas, Robert E. Green Memorial Hospital, for duty as a medical member of examining board, and as recruiting officer, from Kelly Field, Lieut. EDWARD E. COLLINS, Fremont.

To report to the commanding general, Southern Department, for assignment to duty, Capt. ROBERT H. McLEOD, Palestine; Lieuts. THOMAS R. MOREHEAD, Ben Franklin; GEORGE W. GRISWOLD, Cisco; EVERETT O. ARNOLD, Corpus Christi; JOSEPH KOPECKY, El Campo; RICHARD A. WILSON, Marfa; ALBERT A. JACKSON, Mexia.

To his home and honorably discharged from the Medical Reserve Corps on account of being physically disqualified for active service, from Fort Oglethorpe, Lieuts. CHARLES W. WILLIAMS, Bronte; CLARENCE L. McCLELLAND, Frawell.

Utah

To Camp Travis, Fort Sam Houston, Texas, for duty in the camp and in the base hospital and for the purpose of examining and consulting in such orthopedic cases as the commanding general of the camp may direct, Lieut. DAVID K. ALLEN, Salt Lake City.

Vermont

To Camp Grant, Rockford, Ill., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Benjamin Harrison, Lieut. GEORGE L. BATES, Morrisville.

To New York City, Cornell Medical College, for a course of instruction in military roentgenology, from Fort Benjamin Harrison, Lieut. RAY B. THOMAS, Enosburg.

Virginia

To Camp Greenleaf, Fort Oglethorpe, for a course of instruction, from School of Plastic and Oral Surgery, Washington University, St. Louis, Lieut. DORSEY C. TYLER, Richmond.

To Camp Joseph E. Johnston, Jacksonville, Fla., for duty from Fort Oglethorpe, Lieut. HORACE T. HAWKINS, Richmond.

To Camp Kelly, San Antonio, Texas, for duty, from Fort Oglethorpe, Lieut. FRANK A. FARMER, Roanoke.

To Camp Lee, Petersburg, Va., for duty, Lieut. GROVER B. GILL, Tangier; for duty with the auxiliary remount station, from Camp Lee, Lieut. WILLIAM P. MERCHAUT, Manassas.

To Camp Meade, Annapolis Junction, Seventy-Ninth Division, for duty, from Fort Oglethorpe, Lieut. JAMES S. BURGER, Hopewell.

To Camp Pike, Little Rock, Ark., for duty as a member of a board for the special examination of the command for tuberculosis, from Camp Joseph E. Johnston, Lieut. HORACE T. HAWKINS, Richmond.

To Fort Oglethorpe, for a course of instruction, Lieut. GEORGE V. LITCHFIELD, Abington.

To Newport News, Va., for duty at the Port of Embarkation, Lieut. LONSDALE J. ROPER, Portsmouth.

To Staunton, Va., for the purpose of examining applicants for appointments in the Medical Reserve Corps, and on completion of this duty to return to his proper station, from Richmond, Major JOHN G. NELSON, Richmond; JOSEPH T. McKINNEY, Richmond.

To Walter Reed General Hospital, Takoma Park, D. C., for a special course of instruction in tuberculosis examination, Lieut. THOMAS N. DAVIS, Lynchburg.

To Washington, D. C., and report in person to the Surgeon-General of the Army for temporary duty in his office, from Fort Randolph, C. Z., Lieut. EDGAR A. BOCOCK, Richmond; to Army Medical School, for a course of instruction, Lieut. HARVEY R. LIVESAY.

Washington

To Camp Lewis, American Lake, Washington, for duty in the base hospital, to be relieved of his present duties, Capt. ERNEST C. WHEELER, Tacoma.

To Fort Mackenzie, Wyo., for duty from Camp Dodge, Capt. JOHN B. ROBERTSON, Tacoma.

West Virginia

To Army Medical School, Washington, D. C., for a course of instruction, Lieuts. ARTHUR N. HENSON, LAWRENCE A. PETTY, Charleston.

To Walter Reed General Hospital, Takoma Park, D. C., for a special course of instruction in tuberculosis examinations, Capts. GEORGE H. BARKSDALE, JOHN W. MOORE, Charleston; Lieut. DAVID P. SCOTT, Ashland.

To his home and the inactive list of the Medical Reserve Corps on account of being physically disqualified for active service, from Fort Oglethorpe, Lieut. ROBERT K. BUFORD, Princeton.

Wisconsin

To Camp Custer, Battle Creek, Mich., Twenty-Fifth Division, for duty, Lieut. WILLIAM C. HANSON, Racine.

To Camp Jackson, Columbia, S. C., for duty as a member of a board of medical officers for the special examination of the command for tuberculosis, from Fort Oglethorpe, Lieut. LEON H. FLANCHER, Milwaukee.

To Fort Bliss, Texas, for temporary duty, from Fort Riley, Lieut. ADDISON J. PROVOST, Oshkosh.

To Fort Oglethorpe, for a course of instruction, Lieut. HERMAN A. HEISS, Madison.

To New York City, Cornell Medical College, for a course of instruction in military roentgenology, from Fort Oglethorpe, Lieut. HARRY B. PODLASKY, Milwaukee.

To his home and the inactive list of the Medical Reserve Corps, from Washington University, St. Louis, Capt. GUSTAF R. EGELUND, Sturgeon Bay; from Camp Doniphan, Lieut. GEORGE G. RUHLAND, Milwaukee.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Personal.—Dr. Nolton N. Ashley, chief of the staff of the Oakland Emergency Hospital, has resigned, and has been succeeded by Dr. Charles H. Mackey.——Drs. Henry G. Brainerd, Charles L. Allen, Thomas J. Orbison and Edward H. Williams, all of Los Angeles, are the medical members of the board of trustees of the Psychopathic Association of California, elected at its annual meeting in Los Angeles, October 22.

Anthrax.—During August and September, according to the *Monthly Bulletin* of the state board of health there were eight human cases of anthrax in the state as reported to the board, and the state veterinarian has called attention to outbreaks among animals in Yolo, San Joaquin and Stanislaus counties and in remote sections of the San Joaquin and Sacramento valleys. In Yolo for a period the water in irrigating ditches was ordered shut off to prevent the possible spread of the disease by that means. Warnings have been given in regard to the handling of sick stock and the skinning of dead animals.

COLORADO

Personal.—Dr. Raynor E. Holmes, Canon City, has purchased the Goodloe Hospital, with a capacity of twenty beds, and will conduct it as a private hospital.—Drs. Wilbur T. Little and Hart Goodloe have entered on their military duties at Fort Sill, Okla., and Fort Riley, Kan., respectively.——Dr. Frederick A. Jackson, Salida, has been appointed physician and deputy coroner of Chaffee County, during the absence of Dr. Charles S. Phalen.——Dr. George B. Gilmore has been appointed assistant health officer for West Colorado Springs.

DELAWARE

Personal.—Dr. William P. Orr, Lewes, has been placed in command of the Marine Hospital at Lewes, succeeding Dr. George G. Hart, transferred.——Dr. John W. Mullin, Wilmington, has been appointed chief of the medical staff of the Delaware Hospital.

Typhoid Fever.—October 26, there were twenty-nine cases of typhoid fever in Wilmington which are known to have originated outside of that city. In addition, there are twenty cases which have been traced to one source in Wilmington. The supply of drinking water of the city is reported to be sanitary.

ILLINOIS

Personal.—Dr. Edward A. Glasgow was elected president of the First National Bank of Mulberry Grove, November 5.——Dr. Edgar P. Cook, Mendota, has been appointed chairman of the cooperative committee to promote the antituberculosis campaign of the State Council of Defense.

Assignments to Health Officers.—The state director of health, Dr. C. St. Clair Drake, Springfield, announces the following assignments:

Dr. Clarence W. East, Evanston, relieved as medical officer for Camp Grant Health District, and detailed to investigate poliomyelitis in Cook County, and afterward to report for special assignment.

Dr. Arthur Pearman, Rockford, medical health officer to Camp Grant Health District, Rockford.

Dr. Alexander F. Stewart, Oneida, district health officer for the Western Health District, with headquarters at Galesburg.

Dr. John A. Kappelman, Evanston, relieved as medical health officer of Great Lakes-Fort Sheridan Health District excepting special assignment relating to water supply and sewerage disposal problems in North Chicago and Waukegan, and garbage disposal at Lake Bluff and Lake Forest, and detailed as health officer of the Northeast Health District, with headquarters at Chicago.

Dr. John A. Robison, Chicago, medical health officer of Great Lakes-Fort Sheridan Health District, with temporary headquarters at Lake Forest.

Dr. Charles E. Crawford, Rockford, medical health officer of the Northwest Health District excepting temporarily the Camp Grant District, with headquarters at Rockford.

Dr. Edward M. Irwin, Belleville, medical health officer for the Scott Field Health District, including the towns of Shiloh Valley and Belleville, in St. Clair County.

Dr. Charles S. Nelson, Springfield, medical health officer of the North Central Health District, with headquarters at Springfield.

Dr. Elbert L. Damron, Effingham, district health officer for the South Central Health District, with headquarters at Effingham.

Dr. John A. M. Gibbs, Unity, medical health officer for the Southern Health District, succeeding Dr. Isaac A. Foster, New Haven.

Chicago

Children's Hospital Profits by Rummage Sale.—As a result of the four days' White Elephant Sale, held in the old Calumet Club Building, November 7 to 10, $25,369 was raised for the Children's Memorial Hospital.

Personal.—Dr. Daniel N. Eisendrath read a paper on "Why Do We Have Recurrence of Symptoms After Operations on the Biliary Tract?" at the annual meeting of the Wisconsin State Medical Society, held in Milwaukee, October 3, and also read a paper on the same subject at the annual meeting of the Southern Illinois Medical Association, held at Murphysboro, November 1.

INDIANA

Tuberculosis Hospital Site.—The Madison County Council has appropriated $10,000 for the purchase of the site for a county tuberculosis sanatorium. A farm of 92 acres near Anderson has been selected for this purpose.

Endorse Wynn's Candidacy.—The Indianapolis Medical Society, October 27, adopted a resolution endorsing the candidacy of Dr. Frank B. Wynn for a member of the board of school commissioners, and paying high tribute to the ability and attainments of Dr. Wynn.

Personal.—Dr. Henry Jameson, Indianapolis, fuel administrator for Marion County, is the first director whose appointment has been formally recorded by the state administrator.——Major Orange G. Pfaff, Indianapolis, will not be able to accompany Base Hospital Unit No. 32, on account of an injury to his knee.

IOWA

Honor to Rosenow.—At a gathering of representative citizens of Davenport, November 9, honor was rendered to Dr. E. C. Rosenow, in appreciation of his assistance during the recent epidemic of infantile paralysis in Davenport. An inscribed scroll stating the appreciation of his work, signed by the mayor and representatives of civic, social and medical organizations, was presented to Dr. Rosenow.

KENTUCKY

Personal.—Dr. Thomas F. Cleaver, Lebanon, sustained painful injuries when an engine ran into his automobile on a grade crossing, October 19.——Dr. John W. Gilbert, Lawrenceburg, while burning charcoal in a cistern, was overcome by the gas, and managed to get out of the cistern, but fell, sustaining painful wounds of the forehead.

MAINE

Health Department Reorganized.—The old state board of health, which was created in 1885, has been superseded by the state department of health, which was created by an act passed by the seventy-eighth legislature. Dr. Leverett D. Bristol has been appointed commissioner of health, and the state has been divided into health districts, each in charge of a district health officer.

Health Council.—The governor has nominated the following as the new Maine health council: John J. Ryan, Lewiston, probation officer; Eugene A. Cloutier, Lewiston, associate probation officer; Mrs. George F. French, Portland; Drs. Joseph E. Odiorne, North Whitefield; Robert J. Aley, Orono; Hiram W. Ricker, Poland; Sylvester J. Beach, Augusta, and Joseph B. Drummond, Portland.

MASSACHUSETTS

Personal.—Dr. Joseph A. Smith, police surgeon of Worcester, has resigned to enter the army service.——Physicians of Haverhill visted Georgetown, October 22, to pay their respects to Dr. Richmond B. Root, who celebrated the fiftieth anniversary of his entrance into the practice of medicine on that day.

Orthopedic Hospital for Boston.—The Order of Elks has made an offer to the city council of Boston to erect, for the federal government, an orthopedic hospital to cost $250,000, on the site of the old Parker Hill reservoir, provided the city will sell the site for $40,000. This is expected to be the first reconstruction hospital in the United States for crippled soldiers and sailors.

MICHIGAN

Tuberculosis Foes Meet.—At the annual meeting of the Michigan Anti-Tuberculosis Association, held in Battle Creek, Dr. William De Kleinie, Flint, was elected president, Drs. John H. Kellogg, Battle Creek, and Christopher G. Parnall, Jackson, vice presidents, and Dr. Henry J. Hartz, Detroit, secretary.

Personal.—Dr. William F. English, Saginaw, a member of the state board of health, will be stationed permanently at Battle Creek to assist the military authorities and the state board of health in the campaign to protect the health and morals of the soldiers at Camp Custer.——The University of Michigan has accepted the resignation of Dr. Claudius B. Kinyon, Ann Arbor, for twenty years professor of obstetrics and gynecology in the Homeopathic Medical School, and has appointed Dr. Theron G. Yeomans, St. Joseph, his successor.

Antituberculosis Notes.—Muskegon, Ottawa and Allegan counties are considering the proposition to build and operate a cooperative tuberculosis sanatorium.——At the meeting of the Michigan Anti-Tuberculosis Society, October 30, it was recommended that the state establish sanatoriums for men rejected from the National Army on account of tuberculosis who could be restored to health.——It is proposed to erect a joint tuberculosis sanatorium, to cost about $100,000, for the use of the six counties of Oakland, St. Clair, Livingston, Macomb, Washtenaw and Lapeer.——Members of the Delta County Board of Supervisors have approved the establishment of a joint tuberculosis society with Menominee, Dickinson and Iron counties.

MINNESOTA

Smallpox at Hamline.—There are now five cases of smallpox at Hamline University, Minneapolis. Practically all the students have been vaccinated.

Faculty and War Work.—Fifteen men and two women of the University of Minnesota faculty have been granted leave of absence by the board of regents to engage in war work for the government.

Navy Hospital School Opened.—October 29, the Navy Hospital Corps Training School of the University of Minnesota was formally opened, with an initial attendance of 100 Hospital Corps men from the Navy. The staff is supplied by the University of Minnesota Medical School.

Personal.—Dr. Jacob H. Stewart, St. Paul, was found unconscious on Summitt Avenue, St. Paul, November 1. He had apparently suffered a slight concussion of the brain.——Dean T. Frankforter of the College of Chemistry of the University of Minnesota was relieved of his administrative duties at his own request, October 25, and reduced to the rank of professor.——Drs. Clarence E. Lum, Duluth, and Walter Courtney, Brainerd, were severely injured by falling through a trap door at a hunting lodge in Ottertail County, October 25.——Dr. Walter R. Ramsey, St. Paul, will head a medical mission to France in January. Dr. Ramsey will take the place of Dr. Julius P. Sedgwick of the university, who is now in France organizing the work among children in the fighting zone.

MISSOURI

Tuberculosis Ward Opened.—The entire north wing on the fourth floor of the Kansas City General Hospital, which was formerly occupied as nurses' headquarters, is being remodeled, and will be used as a tuberculosis ward, accommodating about sixty-five patients.

Personal.—Dr. George P. Pipkin, Kansas City, who has been in Colorado for the past five months in search of health, has returned greatly improved.——Dr. Louis E. Newman, St. Louis, who had five ribs fractured in a collision between his automobile and a coal wagon, is reported to be convalescent.

Medical Inspection of Schoolchildren.—While medical inspection of the schoolchildren of Kansas City has been suspended by the municipal authorities for lack of funds, a public spirited citizen, who desires to remain incognito, has agreed to pay the expenses of the work for three months. Five physicians, five dentists and ten nurses will form the staff of inspectors and begin work at once under the supervision of the Hospital and Health Board.

Society Inaugurates Movement for Combining Laboratories of State Board of Health and State University.—At a recent meeting of the Boone County Medical Society, to which the members of Audrain, Gallaway, Cole, Cooper, Howard and Randolph County Medical Societies had been invited, resolutions were adopted in which were set forth the advantages of free laboratory work being done by the state university. It was proposed that the people of Missouri be made acquainted with the beneficial results of such a procedure, and that the next legislature be urgently requested to make the necessary appropriation for rendering the resolution effective.

First Class in Oral and Plastic Surgery Completes Course.—The first class of students from the Officers' Medical Reserve Corps ordered to take the course in oral and plastic surgery in the special school established at Washington University Medical School by the Surgeon-General of the Army has completed its course, the members, numbering thirty-seven, returning to their respective posts. The second contingent has reported for the course which began, November 5. There are thirty-five men in this class, of which twenty-seven are surgeons and eight are dentists. This course differs from the first in that it offers, in addition to oral and plastic surgery, surgery of the cranium and brain. Dr. Robert T. Frank, New York, is acting as military director.

Must Clean Up Vice Conditions.—Kansas City must clean up vice conditions at once or be quarantined against army camps is the edict of United States government officials. Mr. Henry F. Bart, in charge of the law enforcement department of the War Department, recently visited Kansas City and found conditions so demoralizing for the soldiers who visit the city from nearby camps that he ordered the immediate closing of all immoral houses, prohibiting women from soliciting on the street, and keeping all liquor away from soldiers. While the saloons have generally obeyed the law to refuse liquor to soldiers, the rooming houses and some hotels have permitted drinks to be served to soldiers in private rooms. The police department and the prosecuting attorney have promised to wipe out these vicious influences.

NEW HAMPSHIRE

Students Must Have Physical Examination.—The trustees of the New Hampshire College, Durham, have decided that hereafter every student on entering college must pass a physical examination.

Personal.—The residence of Capt. Charles A. Lamson, M. R. C., U. S. Army, at New London, was destroyed by fire, October 2.——Dr. Patrick J. McLaughlin, Nashua, has been appointed physician of Hillsboro County, succeeding Dr. Charles E. Congdon, who is in war service.

NEW JERSEY

Hospital Burns.—The Trenton Municipal Hospital, containing fifty-five patients, was burned, November 6. All the inmates escaped or were carried to places of safety, some of them being taken from the second floor by the staff of nurses, who for a times worked single handed in the mission of rescue. The loss is placed at $40,000.

Tri-County Physicians Elect Officers.—At the annual meeting of the Tri-County Medical Society, which includes, Cumberland, Salem and Gloucester counties, held at Millville, October 30, the following officers were elected: president, Dr. Harry A. Stout, Wenonah; vice presidents, Dr. Joseph N. Husted, Woodstown, and John H. Moore, Bridgeton, and secretary-treasurer, Dr. George E. Reading, Woodbury.

NEW YORK

Personal.—Dr. and Mrs. William N. Miller, Croton-on-Hudson, were seriously injured in a collision between their automobile and another car at Harmon-on-Hudson.——Dr. Marcus E. Babcock, Bath, was struck by an automobile, October 28, and received a severe wound of the scalp.——Dr. George F. Reusch, Franklinville, has accepted a position with the mining company at Virginia, Minn.

Commission Discusses Care of Insane.—The Hospital Development Commission, which was created by the last legislature to form a plan for the systematic enlargement of state institutions for the insane and feebleminded, recently conducted a hearing at the New York Academy of Medicine. The commission has presented the results of an investigation of the institutions for the care of the insane in this state and in Massachusetts, as well as in other states. The immediate establishment of psychopathic hospitals, especially in New York City, was urged. These hospitals should be employed simply as clearing houses to determine which persons might be restored by a short term of treatment and which should be sent to the state hospitals. The opinion was expressed that the care of the insane is properly a state

function and should be kept so, as municipal governments were too likely to shift.

New York City

Woman Head of Parole Board.—Dr. Katherine B. Davis has been appointed chairman of the parole board by Mayor Mitchell. The term of office runs for ten years, with a salary of $7,500 a year.

Anniversary Address.—The anniversary address of the New York Academy of Medicine was delivered, November 15, by Dr. Henry Fairfield Osborn, L.L.D., president of the National Museum of National History, on "The Origin and Nature of Life."

Jamaica Hospital Opens Laboratory.—The Jamaica Hospital, Borough of Queens, announces that it has just completed the equipment of a roentgen-ray laboratory and is ready to render prompt and efficient service to the physicians of Queens who refer cases for roentgen-ray examination.

New York's Quota of Doctors for War Service.—The New York Chapter of the Red Cross has issued a statement asserting that when the base hospital units now awaiting a call to duty are in service, New York City will have sent 200 physicians and surgeons and more than 500 Red Cross nurses for war hospital work. The Presbyterian, Roosevelt, New York Port-Graduate, and the New York hospitals are already in service abroad. The other units, Bellevue, Mount Sinai, Herman and Metropolitan hospitals, have long been in readiness.

Medical Services Discuss War Problems.—Under the auspices of the New York State Committee, Medical Section of the Council of National Defense, a rally was held on the evening of November 9 at the Waldorf-Astoria, at which the heads of the medical services of the British and American governments discussed the probable requirements of the medical service. Dr. George D. Stewart presided at the meeting, and the principal addresses were made by Col. Sir Berkeley Moynihan, Major George W. Crile, Cleveland, and Dr. Franklin H. Martin, Chicago.

City Food Cabinet Organizes.—City Market Commissioner Henry Moschowitz has organized a cabinet of advisers drawn from the various city departments to consider the city's new undertaking of buying and selling food and fuel to the people. Work has been assigned to various city departments. The health department has as its task to make a study of wholesale and retail prices of essential commodities and the relation of these prices to the factors of distribution of trade. The Department of Public Charities is to study the relation of present prices to income. The members of this cabinet are to hold a conference each week to discuss ways and means of conducting their campaign to control, if possible, the high cost of living.

PENNSYLVANIA

Hospital Endowed.—The George F. Geisinger Memorial Hospital, Danville, built at a cost of $600,000 has now been endowed by Mrs. Geisinger for $1,000,000. A Scranton trust company has been named as trustee, the local board of trustees having been asked to resign.

Personal.—Dr. W. Rowland Davies, Scranton, has been elected president of the Craftmen's Club.——Dr. Adolph Koenig, Pittsburgh, October 1, was reappointed a member of the State Bureau of Medical Education and Licensure.——Dr. Adam L. Kotz, Easton, has resigned from the staff of St. Luke's Hospital, South Bethlehem, and has been appointed pathologist for the Easton Hospital.——Dr. Henry L. Orth, for twenty-seven years superintendent of the State Lunatic Hospital of Harrisburg, has resigned his position, to take effect as soon as his successor can be appointed.——Dr. Harvey L. Gerberich, Lebanon, was operated on in the Good Samaritan Hospital, in that city, and is reported to be convalescent.——Dr. Daniel Frederick, Ashley, who was operated on for appendicitis in St. Francis' Hospital, Pittsburgh, November 7, is reported to be doing well.

Philadelphia

Ambulance for Jefferson Base Hospital.—The West Philadelphia Auxiliary No. 4 of the American Red Cross presented a new field hospital ambulance to Base Hospital No. 38 of the Jefferson Medical College Hospital, November 7.

Reception to Moynihan and Crile.—At the stated meeting of the Club of Physicians in Philadelphia, November 7, the scientific business of the meeting was omitted on account of the reception to Sir Berkeley Moyihan, R. A. M. C., and Major George W. Crile, M. R. C., U. S. Army.

Plant Oak in Honor of White.—October 26, Arbor Day, in the presence of a notable group of representatives of business, professional and city life of Philadelphia, a red oak tree was planted in Rittenhouse Square in honor of the late Dr. William White, surgeon, author and nature lover.

Personal.—Dr. W. Wayne Babcock has been appointed chief surgeon of the base hospital at Fort McPherson, Atlanta, Ga.——Dr. Clarence P. Franklin, adjutant of the Allentown training camp, has been promoted from major to Lieutenant-Colonel.——Dr. Richard M. Pearce, professor of research medicine, University of Pennsylvania, has been made director of the recently established bureau of medical service of foreign commissions of the American Red Cross.——Dr. Edward A. Schumann has been elected lecturer on obstetrics in the Jefferson Medical College.——Dr. Mary D. Ridgeway, Germantown, was seriously burned, October 17, by the explosion of a lamp.——Dr. Hubley R. Owen has been given an indefinite leave of absence as chief of police surgeons of Philadelphia. Dr. Owen is an officer of the Medical Reserve Corps, and is connected with the Jefferson Hospital Unit.

School of Oral Surgery Opens.—November 10, Provost Smith of the University of Pennsylvania announced that a new course for army dentists and surgeons had been established at the Evans Dental Institute, Fortieth and Spruce streets, under the direction of Dr. Charles K. Turner, dean of the dental school.——Thirtv-two advanced students, who are not only practicing physicians and surgeons, but who are at present actively engaged as officers of the Medical and Dental Corps of the Army, have been detailed to Philadelphia for the school. The course will continue during the period of the war. While the University Dental School has been designated as the headquarters of the course, some of the branches and laboratory work are being done at the Jefferson Medical College, Jefferson Hospital, Baugh Institute of Anatomy of the Jefferson College, Medico-Chirurgical Hospital, Philadelphia General and the Pennsylvania.——The commissioned officers sent to the school from the United States Dental Corps are: surgeons: Major E. J. Johnson, Capts. R. E. Balch, Carl Eggers, A. P. Roope, R. C. Wiggon; Lieuts. Ivan R. Burket, Bernard Friedlaender, S. D. Gleeton, C. W. Hoffman, R. M. Kleckner, F. Koontz, A. J. McCracken, W. H. Maley, J. W. Means, Samuel Oast, Jr., Howard Schriver and E. M. Vaughan. Dental surgeons: Lieuts. Vincent E. D. Bragg, R. S. Catheron, H. O. Cowles, F. H. Cushman, H. T. Hinrici, W. H. Hynard, C. J. Meyer, G. C. Parry, S. D. Ruggles, W. J. Scruten, I. E. Smith, J. D. Stone, C. W. Swing, C. E. Waters, J. B. Williams and P. J. Wumkes.

CANADA

Officers Wounded.—The following officers of the Canadian Army Medical Corps were recently reported wounded: Lieut.-Col. Anson S. Donaldson, Calgary, Alta.; Capts. James E. Bloomer, Moose Jaw, Sask.; J. Harold Jones, Vancouver, B. C.; Richard W. Kenny, Winnipeg, Manit.; Robert Mackenzie, Vancouver, B. C., and James Moore, Listowel, Ont.

Medicated Wines.—The Ontario License Board is instituting an active campaign against the "medicated wines." According to an amendment to the Patent Medicine Law recently passed at Ottawa, the board can now proceed with prosecutions under the Ontario Temperance Act, which carries a maximum penalty of $1,000 fine. It is understood that the board will proceed direct against the manufacturers and not the druggists.

Notification of Venereal Diseases.—The Board of Health of Toronto, through Dr. Charles J. C. O. Hastings, will ask the Ontario Board of Health to have all persons with venereal disease placed under quarantine, as is the case with all other communicable diseases. They will also seek legislation to provide for any one suspected of being infected undergoing an examination, and, if found diseased, quarantined, the board of health to have the final decision in case of dispute.

Canadian War Cripples.—Douglas C. McMurtrie in *The Survey*, Nov. 3, 1917, gives an account of the work done by the Military Hospitals Commission and allied organizations and officials in Canada for the training of soldiers crippled in the war. This work is now well organized in Canada and decided progress is being made. McMurtrie describes particularly the work in Alberta in the Ogden Military Convalescent Hospital, near Calgary, and also at Edmonton, where well equipped institutions are carrying on this work.

Fee-Splitting in Toronto.—Dr. D. J. Gibbs-Wishart, president of the Academy of Medicine, Toronto, took occasion to rap fee-splitting in his presidential address before that body.

"It is a frankly dishonest transaction which stamps as a fraud the practitioner who demands his pound of flesh." He stated he was credibly informed that men in Toronto had endeavored to solicit the operative work of practitioners on the frankly stated basis of a fifty-fifty division of the fee. He, even—specialist in nose and throat—had been personally solicited by a general practitioner to state what percentage he might expect to receive on referred cases.

Scarcity of Doctors in Canada.—Dr. John W. Edwards, ex-member of parliament, Cataraqui, Ont., says that medical students should be exempted from the military service. Medical officers point out that the public does not realize the scarcity of doctors in Canada at the present time. It is understood that the government intends issuing authority to the exemption boards to allow medical students to continue their studies, in view of the fact that the War Office has sent back to Canada to finish their course second and third-year men of Queen's, Toronto and other medical colleges, who were serving in various capacities overseas.

Cancer in Canada.—Dr. Charles J. C. O. Hasting, M. O. H., Toronto, estimates there are between 7,500 and 8,000 deaths from cancer in Canada every year, and the majority of these, 80 to 90 per cent., are of persons over 40 years of age. Three quarters of those lives might be saved by early diagnosis and proper treatment. He sounds a note of warning to the public and says that as there is no known medical cure for cancer there is therefore no worse criminal than the man who advertises to sell a cure for cancer (or consumption), as he is robbing the victims of their only chance for recovery—early eradication, radium or roentgen-ray treatment.

Hospital News.—Some time ago the Hamilton (Ont.) City Council appropriated $60,000 to $70,000 for remodeling the administration building of the Hamilton City Hospital, but had held back the money. Last week a conference took place between the hospital governors and the board of control, but they failed to come to an agreement as to the absolute necessity of the alterations at the present time.——The Military Hospitals Commission of Canada has decided on the immediate erection of a convalescent home for returned soldiers at London, Ont. Provision will be made for 300 beds, and arrangements will be made later on to expand to a capacity of 600 beds. The Ontario government will bear a substantial proportion of the cost of construction.

Medical Inspection of Schools in Toronto.—The system of medical inspection of schoolchildren now in operation in Toronto provides for inspection in the separate (R. C.) schools as well as the public schools, and for all the year round, instead of for ten months of the year, as formerly. Dr. Marchant B. Whyte, who was superintendent of the Isolation Hospital, has been placed in charge of the work under Dr. Charles J. C. O. Hastings, the former being director of medical services. Under the arrangement the health physicians employed in the schools are required to carry out the duties of medical officers of health, each being assigned a district—the city having been divided into several health districts, five in number, and under this arrangement, likewise, the public school nurses have been incorporated into the general public health nursing system of the city.

Personal.—Capt. John M. Adams, C. A. M. C., who has been overseas for two years, has been recalled to Ottawa for special duty in the department of documents.——Major Andrew Macphail has arrived in Montreal from overseas.——An escaped prisoner from Germany has brought word of the Hon. Dr. Beland, formerly postmaster-general of Canada. He is in good health, but has lived regularly in prison since June last. He is allowed out twice weekly under guard. He gives his medical services freely among the British prisoners and maintains a kitchen at his own expense, and is a very efficient cook. Dr. Beland was not told of the death of his wife until three days thereafter, apparently so that he would not have a good excuse to ask to go to her funeral.——Dr. William H. Hattie, Halifax, N. S., was elected president of the Canadian Public Health Association at its recent meeting.——Dr. Frederick S. Minns, who was acting medical inspector in chief of the board of education in Toronto when it was transferred to the Department of Public Health, has resigned.——Drs. Norman E. McKay, M. O. H., Halifax, N. S., and Napoleon Boucher, M. O. H., Montreal, Que., have been members of a special committee under the food controller, inquiring into the milk supply of Canada.——Capts. Charles A. Temple and William J. Clark and Major W. Harley Smith, Toronto, who have been in England for two years, have returned.——Lieut.-Cols. Irving H. Cameron, Toronto, Clarence L. Starr and John D. Courtnay, Ottawa; Major Donald McGillivray, Toronto, and Dr. Robert B. Wilson, roentgen-ray expert, Montreal, have started from Halifax to make an official visit of inspection of all the military hospitals of Canada from coast to coast.——Capt. H. A. Simkins of the Spadina Military Hospital, Toronto, has been transferred to England.——Dr. J. Gordon Gallie, Toronto, has resumed practice after service abroad.——Capt. Andrew S. Moorhead, Toronto, is now doing surgery in France under Lieut.-Col. Herbert A. Bruce, Toronto.——Capt. Roland W. Young, Oshawa, Whitby Military Hospital, has been transferred to the Toronto Military Base Hospital.——Major Andrew Macphail, Montreal, editor of the *Canadian Medical Association Journal*, has gone to visit his old home in Prince Edward Island.

GENERAL

Correction.—At the Physicians' Club banquet to Dr. Billings, described last week, it was stated that Governor Lowden was introduced by Dr. A. M. Corwin and that Dr. Arthur O'Neil acted as toastmaster. Dr. A. Augustus O'Neil acted as toastmaster and introduced Governor Lowden.

Correction.—In publishing the list of chiefs of the medical service in the cantonment hospitals in THE JOURNAL for Oct. 20, 1917, Major William S. Bigelow of Boston was given as the chief of the service of Camp Cody, Deming, N. M. This should be Major Edward B. Bigelow of Worcester, Mass.

Paul Jones Club Officers.—At the annual meeting of the Paul Jones Club, Sons of the American Revolution, held at Portsmouth, N. H., November 7, Dr. Henry I. Durgin, South Eliot, Me., was elected president, and Drs. William O. Junkins, Eugene B. Eastman, Portsmouth, and Fred S. Cowle, Portsmouth, were elected members of the board of managers.

Ohio Valley Physicians Elect Officers.—At the nineteenth annual meeting of the Ohio Valley Medical Association, held in Evansville, November 7, the following officers were elected: president, Dr. J. Rawson Pennington, Chicago; vice presidents, Drs. Walter F. Boggess, Louisville, Ky.; Meyer L. Heidingsfeld, Cincinnati, and Virgil H. Moon, Indianapolis, and secretary-treasurer, Dr. Benjamin L. W. Floyd, Evansville (reelected).

Eye, Ear and Throat Men Meet.—At the twenty-sixth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology, held in Pittsburgh, October 29 and 30, the following officers were elected: president, Major Allen Greenwood, M. R. C., U. S. Army, Boston; vice presidents, Drs. Virginius Dabney, Washington, D. C.; Frank R. Spencer, Boulder, Colo., and W. Likely Simpson, Memphis, Tenn.; secretary, Dr. Lee Masten Francis, Buffalo, and treasurer, Dr. Secord H. Large, Cleveland.

Bequests and Donations.—The following bequests and donations have recently been announced:

University of Pennsylvania, $600,000 from the executors of the will of Eckley B. Coxe; of which $500,000 is to be used for the University Museum, and $100,000 for the pay of professors and keepers.

St. Luke's Hospital, Bethlehem, a gift of a ward, costing $90,000, from the Bethlehem Steel Company, October 18.

The Board of School Commissioners, Indianapolis, his medical laboratory for the use of physicians and others needing information, and the Presbyterian Board of Missions, his instrumental and surgical equipment by the will of Dr. John Kolmer.

St. Bartholomew's Clinic, New York, $10,000; the Morristown (N. J.) Memorial Hospital, $100,000; Germantown Dispensary and Hospital, $100,000; St. John's Guild, New York, $50,000, and Babies Hospital and St. Mary's Free Hospital for Children, New York, each $100,000 by the will of Mrs. Mary Warden Harkness.

St. John's Guild and Hebrew Orphan Asylum, New York, each $500, by the will of Joseph Morningstar.

Augustana College, Rock Island, Ill., his library, by the will of Dr. Carl Oscar Bernhardi, Rock Island.

FOREIGN

De Quervain Succeeds Kocher.—F. de Quervain, now professor of surgery at the University of Basle, has accepted a call to the medical faculty of Berne as successor to Kocher.

Jadassohn Called to Succeed Neisser.—J. Jadassohn, who has been professor of dermatology at the University of Bern since in the nineties, and is said to have been practically the founder of dermatology in Switzerland, has now gone to Breslau to take the chair left vacant by the death of his old teacher, Neisser, some months ago. He was born not far from Breslau, in 1863.

Beretta Prize for Milan Physicians.—Dr. A. Beretta of Milan bequeathed to the city of Milan a fund of $40,000, the income of which is to be awarded as a biennial prize for the best work on clinical medicine or pathologic anatomy done during the two years by some physician who has resided in

the province of Milan for at least five years, but has not been in practice longer than twelve years. The money prize is to be accompanied with a gold medal.

Memorial to Gutierrez of Madrid.—A statue of Gutierrez, Count of San Diego, was recently unveiled on the grounds of the Rubio Institute at Madrid, three years after the death of this leader in gynecology in Spain. Among the speakers, Cortezo, president of the Academia de Medicina and editor of the *Siglo Medico*, classed Gutierrez with Letamendi and Cajal as Spain's great modern trio. He remarked further that the fame of the practitioner is ephemeral, even the best beloved, but a monument prolongs it and thus makes up in part for the inadequate compensation which the fees for his visits represent in return for the persevering devotion and self abnegation which the practice of medicine signifies.

Deaths in the Profession Abroad.—Sir David Caldwell McVail, Glasgow, Scotland; L.F.P.S. (Glas.), 1866; L.R.C.P. (Edin.), 1866; M. B. University of Glasgow, 1876; aged 72; formerly professor of clinical medicine in St. Mungo's College, Glasgow; physician to the Glasgow Royal Infirmary; Crown member for Scotland of the General Medical Council; a member of the Court of Glasgow University, since 1891; a prolific writer on the mechanism of respiration and diseases of the respiratory organs; died at his home in Glasgow, November 4.——**E. Huet,** one of the pioneers in electrology in France, aged 57. He had charge of the electrotherapeutic department at the Salpêtrière, and the account of his work and honors is practically the history of electrodiagnosis during the last twenty-five years.——Lieut.-Col. **F. E. Viana,** professor of surgery at the Medico-Military School at Mexico City.——**P. Malerba,** research worker and professor of physiologic chemistry at the University of Naples, aged 68.——**D. Sangrador** of Madrid, killed in a railroad accident while on his way to the recent medical congress at Valladolid.——**J. Rambousek,** professor of factory hygiene at the University of Prague, and an authoritative writer on industrial poisonings.

LONDON LETTER

LONDON, Oct. 23, 1917.

The War

MINISTRY OF HEALTH POSTPONED

The prime minister, Mr. Lloyd George, received a deputation from the joint committee of approved societies and the conference of the Amalgamated Society of Industrial Assurance, representing about 12,000,000 insured persons. The objects of the deputation were: 1. The early establishment of a ministry of health on lines satisfactory to national health insurance organizations. 2. The early passage into law of a bill for the simplification of insurance administration. 3. The financial readjustment of national health insurance by a further grant. The premier said that the exchequer was not in a position in the middle of a great war to make the same promises in regard to insurance or any other social projects that it could very well make in days of peace. Our energies and our thoughts had been taken away from projects for the amelioration of the condition of the people to the terrible demands made on us in the defense of our liberties. The drain on our resources was unparalleled, and we were not at the end of the charge on our national wealth. He wished he could predict that we might soon see the end of it, but the task which the nation had taken in hand must be accomplished. Otherwise not merely the power and prestige of this nation were broken, but its future was pretty hopeless. We must husband our resources and incur no obligations beyond the strictest and sternest necessities of the hour, and when demands were put forward for improvements here and there, his answer would be, "Concentrate on victory." For the moment every claim on the exchequer must be considered in the light of the terrible possibilities of the war; and when it was over, in a freer and happier atmosphere we could begin to rebuild, reconstruct and regenerate. As to the bill for a ministry of health, Mr. Lloyd George said he was the last person to contend that it was not an urgent measure. We had to repair the ravages of the war. Stricter attention to the health of the community and to the saving of life by that means was one of the most efficient and surest methods of attaining that end. The damage would be great, even if the war was arrested now. The losses would be beyond count; and we should have to devote resolution, courage and readiness to find an agreement which this war had disclosed rather than seek for a point of controversy—we should have to apply the whole of that new spirit to proposals of this kind. Otherwise we should never repair within our day, nor within the day of our children, the ravages of this great war; but if we did concentrate in that spirit we should not merely clear the débris of war, we should not merely restore, but we should build something stronger, grander and on a firmer foundation than we had ever witnessed. He was certain that in one form or another we must drastically reform the administration of our health laws. There were conditions that were incompatible with health. It was a scandal that a nation which had shown such capacity for meeting great emergencies should have lethargically tolerated conditions of that kind. It was regrettable that people capable of the sort of explosive energy which this country had put forth in two or three years should have allowed slums, misery, and wretchedness and squalor to drain the land. We wanted people who enjoyed liberty to be fit to defend it, and that was one of the problems of the future.

THE MEDICAL TREATMENT OF INVALIDED SOLDIERS

The Army Council has issued revised instructions relating to the continued treatment and training of soldiers discharged from the army on medical grounds. Two categories of patients are contemplated in these instructions: (1) soldiers who at the actual time of their discharge require further treatment, and (2) soldiers who at some time after their discharge are found to require further treatment. This category is confined to men suffering from ailments arising from wounds or injury sustained during military service. As a general rule, the patients to whom these instructions apply will be those suitable for treatment as outpatients in hospitals, because army regulations in force already provide that so long as inpatient treatment is required, soldiers shall not be discharged from hospital. It is foreseen, however, that in certain special cases, as in tuberculosis or paraplegia, further inpatient treatment may be necessary. The further treatment thus to be afforded will be available at military Red Cross hospitals through agency of the local war pensions committees. In order that the local committees may efficiently carry out the duties devolving on them, they are to be furnished with cards, recording all relevant information relating to men about to be invalided out of the army. These cards will indicate whether or not further treatment is needed, and, if so, where it may be obtained. The committees will also be empowered to appoint hospital visitors, to visit and confer with the hospital authorities—or the medical authorities at command depots and camps—responsible for men about to be invalided out. In addition to treatment, special courses of technical training may in many cases be desirable. Patients for treatment in the second of the two categories described above must themselves make application in the first instance to the local committees. After ascertaining the eligibility of the applicant, the committee will send him to a military hospital for examination. The hospital will furnish a card, as described above, giving authority for the further treatment of the applicant.

FOOD ECONOMY

Sir Arthur Yapp, president of the Y. M. C. A., has undertaken the direction of a new food economy campaign, which is necessary in view of the dearth of many of the principal foods. Next month a flood of oratory is to be let loose throughout the country. A committee of experts in the food controller's department is working out a scientifically graded scheme of rationing. Taking into consideration the available supplies of food and the needs of our allies, they are seeking to find out exactly what each man, woman and child ought to have according to age and occupation and other relevant circumstances. As soon as they have reached decisions, the scale of consumption which they recommend will be made known. The rationing will be for all essential foods. It will be our task to see that the scale is observed. In addition it will be necessary to ask people occasionally to make a definite sacrifice and for a time to go without some particular thing altogether. Sir Arthur Yapp is endeavoring to establish a league or committee of national safety to bring home to the people that our national safety and the allied cause generally depend on the extent to which we economize in food consumption. The first members of the league will be asked to do everything possible to educate others. They will be asked to pledge themselves to live within the scale of rations laid down and to avoid waste. It is hoped to evolve a scheme to keep in touch with members so that once a month points for use in the campaign can be sent to them.

THE NATIONAL HEALTH IN 1916

The report for 1916 of Sir Arthur Newsholme, medical officer of the Local Government Board, has just been issued.

A review of the national health of the present time is rendered exceptionally difficult by the disturbances of population due to the war and to the gigantic new industries which have been created. So far as ordinary infectious diseases are concerned, with the exception of measles, the record of 1916 has remained favorable. There have been no cases of cholera. The tuberculosis work of local authorities during the year has been further restricted by the war. One of the most urgent of after-war problems will be to secure the early resumption and extension of this work, particularly in regard to the provision of greatly increased hospital accommodation for persons with advanced cases of consumption. The reduction in the number of births emphasizes the importance of saving child life and of improving the health of all survivors. Sir Arthur Newsholme considers that there is no insuperable difficulty in reducing the total deaths in childhood to half their present number. During 1916 the rate of infant mortality was the lowest on record. Owing to a large proportion of health officers having been released for military service, an increasing number of women physicians have been appointed for public health work, the depletion of the services having become serious. Unless considerable readjustments are made, more officers cannot be spared for the army consistently with the public safety. The staffs of inspectors of nuisances had also been greatly depleted, and many untrained men and women are performing duties formerly in the charge of trained men. It is not surprising that under these conditions, outbreaks of infectious diseases in a few instances have not been promptly controlled, and that, especially in regard to smallpox, enhanced risks have been, and continue to be, incurred owing to the inexperience of the local officers. A large part of the time of those medical inspectors who are not on military duty is taken up in emergency work arising out of the foregoing considerations. Health officers and sanitary inspectors remaining on civil duty have done admirable work in assisting less experienced temporary colleagues in other districts. In a not inconsiderable number of instances, one officer has acted for several areas in addition to his own.

PARIS LETTER

PARIS, Oct. 18, 1917.

The War

RESULTS OF ANTITYPHOID AND ANTIPARATYPHOID VACCINATION OF THE SOLDIERS DURING THE WAR

An interesting communication on this subject was read by Prof. H. Vincent at a recent meeting of the Académie des sciences. He said that in the present war, during the winter of 1914-1915, a very severe, rapidly progressing epidemic had made its appearance. Because of the exigencies of war, preventive vaccination could not be made effective at the front during that period. A less serious recurrence of paratyphoid took place during the fall of 1915. Since then the armies at the front have enjoyed an unusually good state of health. Typhoid and paratyphoid have existed only in a very slight degree, in spite of the presence of the aggravating conditions of exceptional severity brought about by a violent and prolonged war; by the mobilization of large numbers of troops, such as have never been observed before in any war; by the constant arrival of new troops; by the close contact of many men, thus increasing the danger of direct and indirect contact through the agency of the sick, as well as by carriers; and by the flies and the continual contamination of the soil.

The wholesale vaccination of the troops at the front was commenced in February, 1915. Since the beginning of the war the laboratory of the army has sent to the front 5,513,073 doses of vaccine. Before the war and since the year 1911, 20,000 soldiers have been vaccinated against typhoid and paratyphoid A and B with mixed or triple vaccine; 200,000 others have been vaccinated against typhoid only. At the present time, thanks to this active immunization, these diseases can be considered as having been practically vanquished. From 6.12 in November, 1914, 7.24 in December, 1914, and 7 in January, 1915, per thousand men, the number of cases dropped rather suddenly to 4.3, 2.49 and 1.6. In August and September, 1915, the morbidity (paratyphoid predominant) rose to 2.47 and 2.65, but since then it has diminished more and more. During February, 1916, the percentage of cases per thousand was less than 1, and this percentage has been maintained. In 1917, the monthly rate was: 0.1, 0.048, 0.025, 0.028, 0.036, 0.064, 0.068 and 0.063 per thousand. As for the mortality, from the fastigium of the 1914-1915 epidemic (November to March), the curve descended almost vertically to the present time. The vaccination by two injections is responsible for this remarkable recession in the number of cases and deaths, and the mortality is now so low that one is obliged to evaluate on the basis of 100,000. Even when we reduce to that scale, the percentage is often fractional. In 1917, it has been successively 0.6, 0.5, 0.5, 0.1, 0.3, 0.6, 0.4 and 0.3 per hundred thousand.

The value of this specific prophylactic measure cannot, in fact, be determined precisely. If the morbidity and mortality of these typhoid diseases as observed from November, 1914, to January, 1915, had been maintained, one could estimate, on the basis of 4 or 5 million soldiers having been sent to the front during the thirty-eight months of the war, that the number of cases of typhoid would have exceeded a million, with 145,000 deaths. This is not taking account of the aggravating influences obtaining during the war and the unusual weather conditions of the fall months of the three years during which this war has been waged; consequently, this preventive vaccination may be credited with having been of immense economic value to the army as well as to France as a whole. Taking for comparison the health of the French army before the war, as set forth in the official statistics for the year 1911 (the last published), it will be seen that at present the number of cases of typhoid fever occurring in the armies at the front are more than seven times less numerous, and that the number of deaths is 8.5 times less numerous than during peace times.

SHELL FRAGMENT IN THE LEFT AURICLE

At a recent session of the Académie de médecine, Dr. Le Fort reported an observation made on a wounded soldier from whose left auricle he extracted a piece of shell the size of a pea. Of the six walls of the left auricle, only one is accessible, the postero-inferior, the narrow space bounded by the pulmonary veins, the auricular appendage and the auriculoventricular vessels. The shell fragment had been fixed with the fingers in a fold of the auricular wall; two loops of thread were passed at the base of the fold. Then the auricle was incised with a bistoury, the fragment extracted and the threads tightened. Complete hemostasis was effected. The patient died on the fourth day. The necropsy showed that the sutures had held perfectly, that there had been no hemorrhage in the pericardium, and no blood clots were found in the heart. The patient was 45 years of age, and he had recovered from a pulmonary affection shortly before he was wounded. The intrapleural space was entirely obliterated. The heart was small and fatty, with fatty perinephritis of the right kidney, slight hydronephrosis of the left, etc. Dr. Le Fort has thus far performed seven operations for the extraction of foreign bodies from the heart, and four pericardial extractions with one death and ten recoveries.

Repression of Public Drunkenness

October 1, a law, dealing with the repression of public drunkenness and the supervision of saloons, was promulgated. This law imposes on persons found in a manifest state of drunkenness on the streets a fine of from 1 to 5 francs for the first offense. The second offense is punishable by from one to three days' imprisonment, and a third offense, when occurring within the first twelve months, is punishable by imprisonment for from six days to one month or a fine of from 16 to 300 francs. Any person who is convicted twice may be deprived of his electoral and civic rights for two years. The law fixes an analogous penalty for such dealers as shall serve liquors to minors (under 18), and dealers who are fined more than once will be liable to closure of their establishments for a year or more. The sale of alcoholic liquors on credit is interdicted. The law forbids the employment of females under 18 years of age in retail liquor establishments, unless they are members of the proprietor's family. Dealers who encourage debauchery shall be imprisoned for from six days to six months, and shall forfeit their political rights for five years. Their establishments shall be closed permanently.

Treatment of War Fractures

At one of the recent sessions of the Société de chirurgie of Paris, Dr. Heitz-Boyer, chief of the surgical clinic of the Faculté de médecine de Paris, described the organization and method of procedure of the Fracture Center at Châlons-sur-Marne, of which he is director. This center was established for the following reasons: (1) to assure patients, whose condition often demands many months of hospital residence, of continued care under conditions which must obtain if the surgeon is to assume full responsibility; (2) to provide that

the care is always given in a center of this kind properly equipped from the point of view of the necessary material organization, apparatus and procedure; (3) to institute such care as early as possible, endeavoring to keep in mind the military as well as the surgical needs; (4) to assure the evacuation of these patients at the earliest possible time to the next unit formation within the same surgical group.

From the application of these principles has been born the special surgical "bone group" in each army, consisting of three grades or divisions, comprising the principal formations situated in the rear of the lines where operations are performed. Farther back in the interior are two branches, the first known as the second hospital, where the discharged patients, or those who are out of danger, are hospitalized until such time as the wounds have healed and the bones have united; and a second, known as the division of physiotherapy where the convalescents and those who are to be discharged from the army on account of disability receive such care as will restore to them as much function as their injury permits. Therefore, the treatment of the wounded is always under the surveillance and direction of a single responsible head. All records are carefully kept and interchanged, so that complete observations may be made, and the value of different procedures employed by the single units may be compared. Finally, from a material point of view, each group can be so well equipped that all kinds of work can be done, the equipment sufficing to take care of the wounded in the different stages of their illness. The apparatus accompanies the wounded into the different relays of the entire course. The results obtained by Heitz-Boyer in his center, where he has treated, since April, nearly 700 cases of fracture, more than 100 of these involving the thigh, have been so good that the value of this team-work method is fully attested.

New School for the Reeducation of Disabled Soldiers

The president of the republic recently visited a new school for the vocational reeducation of the mutilated, founded by the Union of Foreign Colonies in France in the Ferme de Champagne at Juvisy-sur-Orge for the benefit of war victims. The new school was founded exclusively for the benefit of mutilated or wounded agriculturists. It includes sections for general training, horticulture, nurseries, agricultural mechanics and automobile traction. Since the opening of the school, 550 patients have been admitted. A large number have been returned to their homes, properly benefited; for the others, lucrative positions have been obtained by the union. The principal workers in establishing these foundations, in which cooperated American, English, Dutch, Norwegian, Russian and other committees, constituting the Union of Foreign Colonies, are: Mm. Ascher, L.-V. Benet, L. Kone and B.-J. Shoninger, vice presidents.

The Bread Card and the Composition of Bread

Commencing October 15, a rigorous bread card régime was instituted. The maximum quantity of bread allowed for the weekly consumption of each individual was fixed on the following basis: for persons from 1 to 6 years of age, 300 gm. per day; more than 6 years of age, 500 gm. In addition, a flour ration of 50 gm. per day is provided for infants under 3 years of age; on the other hand, a supplementary ration, not exceeding 200 gm. per day, is allowed for all persons who shall make satisfactory declaration to the effect that such addition is indispensable to their nourishment. A second supplementary ration, not to exceed 200 gm., is allowed to persons engaged in hard work, and whose food consists largely of bread.

The composition of bread provoked an interesting discussion in a recent session of the Académie de médecine. The following resolutions were adopted: (1) the miller must grind only grain which is sound, free from foreign bodies and altered grains, that is, good and not damaged grain; (2) the percentage of the boltage cannot be uniform; it necessarily must vary with the quality of the grain, as determined by the weight of a hectoliter (2¾ bushels); (3) acting on the directions so far received, it seems that the present regulations in vogue have brought about the distribution of bread which has in a certain number of cases caused some illness; (4) the method of making bread with lime water, besides having many advantages, does not seem to cause any inconvenience from the health standpoint; (5) in regard to substitutes for cereals, it is very desirable to use rice in the French diet as much as is possible. Rice flour, as well as barley, rye, buckwheat and corn flour can be added to wheat flour for bread making. If well prepared, these flours do not give rise to any untoward effects.

Association News

THE CHICAGO SESSION

Local Committee on Arrangements for the Chicago Session of the American Medical Association

The following constitute the Local Committee on Arrangements for the session of the American Medical Association to be held in Chicago, June 10-14, 1918: Drs. Ludvig Hektoen, chairman; Charles J. Whalen, secretary; W. A. Pusey, John V. Fowler, Hugh T. Patrick, M. L. Harris, Charles F. Humiston, J. B. Herrick and Frank Billings.

Marriages

LIEUT. PHILIP EMERSON THOMAS, JR., M. R. C., U. S. Army, Camp Beauregard, Alexandria, La., to Miss Louise Walls of Holly Grove, Ark., October 28.

SAMUEL LUTZ ZURMEHLY, M.D., Rushsylvania, Ohio, to Miss Ethel Long of Kingston, Ohio, at Chillicothe, Ohio, October 26.

MAJOR ARTHUR WELLS ELTING, M. R. C., U. S. Army, Albany, N. Y., to Mrs. Francis W. Rawle of Bryn Mawr, Pa., October 25.

WALTER SCOTT PATTERSON, M.D., Butler, Pa., to Miss Gertrude Connors of Penn Township, at Butler, October 24.

JOHN THOMAS SULLIVAN, M.D., Milwaukee, Wis., to Miss Lona Chapman of North Fond du Lac, Wis., October 27.

AUGUST EDWARD WITZEL, M.D., Utica, N. Y., to Miss Helen Marguerite Van Alstyne of Ilion, N. Y., October 24.

ROBERT MORTON MANSON, M.D., San Leandro, Calif., to Miss Madeline Strohl of Oakland, Calif., October 31.

JOHN C. REED, M.D., Duquesne, Pa., to Miss Lillian Bennethum of Harrisburg, Pa., October 24.

PETER BURRELL MULLIGAN, M.D., Hazleton, Pa., to Miss Helen Leonard of Camden, N. J., recently.

AUDLEY DURAND STEWART, M.D., Rochester, N. Y., to Miss Jane Walker Russell of Chicago, recently.

WALTER MARTIN SKALLERUP, M.D., Walker, Iowa, to Miss Belle Forrester Black of Chicago, June 27.

PATTISON ALBERT WATERS, M.D., Monte Vista, Colo., to Miss Ethel Keen of Denver, October 7.

Deaths

Newell Bly Burns, M.D., North Wilmington, Mass.; Harvard Medical School, 1909; aged 35; a Fellow of the American Medical Association, and a member of the National Association for the Study and Prevention of Tuberculosis and the American Sanatorium Association; assistant superintendent and physician to the North Reading (Mass.) State Sanatorium for Tuberculosis; instructor in pulmonary diseases in Tuft Medical School, Boston; died in the sanatorium, October 27, from rheumatic endocarditis.

Harris Gray Sherman, M.D., Cleveland; College of Physicians and Surgeons in the City of New York, 1880; aged 61; a Fellow of the American Medical Association, and a member of the American Academy of Ophthalmology and Oto-Laryngology, and American Ophthalmological Society; a specialist on diseases of the eye; first medical inspector of schools of Cleveland; at one time president of the Cleveland Chamber of Commerce; died in Charity Hospital, Cleveland, October 30, from pneumonia.

Francis L. Springer, M.D., Newport, Del.; University of Pennsylvania, Philadelphia, 1877; aged 63; formerly a Fellow of the American Medical Association; a member of the Delaware State Medical Society, and its president in 1912; for nine years trustee of the poor, and once a member of the visiting staff of the State Hospital, Farnhurst; for several terms physician of New Castle County; died suddenly at his home, October 24, from cerebral hemorrhage.

Lieut. George Walter H. Conrad, M. R. C., U. S. Army, Philadelphia; Hahnemann Medical College, Philadelphia,

1913; aged 29; a specialist on diseases of the eye, ear, nose and throat; who had been on duty at Fort Benjamin Harrison, Ind., until August 27, when he was transferred to the aeronautical school at Austin, Texas; died in the Army Base Hospital, San Antonio, Texas, October 30, from abscess of the brain.

John C. Webster, M.D., Lafayette, Ind.; Rush Medical College, 1870; aged 76; a Fellow of the American Medical Association; formerly president of the Indiana State Board of Medical Registration and Examination; consulting physician to St. Elizabeth's Hospital, Lafayette; died, November 11, from the effects of carbolic acid accidentally self-administered, in mistake for liquid petrolatum.

Jefferson A. Davis, M.D., Kansas City, Kan.; Medico-Chirurgical College of Kansas City, Mo., 1902; aged 54; a Fellow of the American Medical Association; for eight years coroner of Wyandotte County, Kan., and formerly police surgeon of Kansas City, Kan.; died in St. Margaret's Hospital, Kansas City, Mo., October 7, from heart disease.

Andrew Jackson Hall, M.D., Natchez, Miss.; Bellevue Hospital Medical College, 1879; aged 78; formerly a Fellow of the American Medical Association; vice president of the Mississippi State Medical Association in 1892; a member of the staff of the Natchez City Hospital since 1889; a Confederate veteran; died in New Orleans, October 21.

Horace Edward Bunce, Jr., M.D., Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1900; aged 47; formerly a member of the Medical Society of the State of Pennsylvania; a member of the medical staff of the Jones and Laughlin Mills, Pittsburgh; died at his home, October 28, from septicemia.

George L. Saunders, M.D., Columbus, Ohio; Ohio State University, Columbus, 1908; aged 43; a member of the Ohio State Medical Association; formerly a member of the staff of the Ohio Hospital for Epileptics, Gallipolis; died in Grant Hospital, Columbus, October 29, from disease of the intestine.

John Milton Dexter, M.D., New York City; College of Physicians and Surgeons in the City of New York, 1894; aged 49; formerly a member of the Medical Society of the State of New York; was run over and killed by an automobile, near his home, November 1.

Albert Nathan, M.D., Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1909; aged 31; a member and once secretary of the South Carolina Medical Association; died in Boston, October 22.

Paul S. Morrison, M.D., Bancroft, Kan.; Ensworth Medical College, St. Joseph, 1909; aged 33; for several years a druggist and physician of South St. Joseph, Mo.; died in a hospital in Atchison, Kan., November 2.

A. C. McNutt, M.D., Bucyrus, Ohio; Starling Medical College, Columbus, Ohio, 1856; aged 89; surgeon of the Eleventh Ohio Volunteer Infantry during the Civil War; died at his home, October 16, from uremia.

Abraham L. Lehman, M.D., Philadelphia; Medico-Chirurgical College of Philadelphia, 1899; aged 62; a pioneer of the Coeur d'Alene district; died in the Providence Hospital, Wallace, Idaho, October 21.

William Albert McCallie, M.D., Knoxville, Tenn.; Vanderbilt University, Nashville, Tenn., 1876; aged 65; formerly a member of the Tennessee State Medical Association; died at his home, October 18.

James H. Dobbins, M.D., Bellefonte, Pa.; University of Pennsylvania, Philadelphia, 1849; aged 90; formerly a member of the Medical Society of the State of Pennsylvania; died at his home, recently.

Dennie Daniel Trotter, M.D., Madison, Ga.; Atlanta, Ga., School of Medicine, 1912; aged 28; formerly a member of the Medical Association of Georgia; died in a hospital in Atlanta, October 16.

Decatur H. Burk, M.D., Warner, Okla.; Medical College of Georgia, Augusta, 1889; aged 67; formerly a member of the Oklahoma State Medical Association; died in Muskogee, Okla., October 24.

John Kolmer, M.D., Indianapolis; Jefferson Medical College, 1894; aged 51; a Fellow of the American Medical Association; a well known surgeon of Indianapolis; died at his home, October 21.

John Craig Johnstone, M.D., Lawton, Okla.; St. Louis University, 1912; aged 34; formerly a member of the Oklahoma State Medical Association; died in Blackwell, Okla., October 7, from diabetes.

James M. Bartholow, M.D., Urbana, Ill.; Rush Medical College, 1871; aged 70; a member of the Illinois State Medical Society; a veteran of the Civil War; died at Champaign, Ill., October 8.

James A. Summers, M.D., Johnson City, Tenn.; College of Physicians and Surgeons, Baltimore, 1874; aged 69; died at his home, August 4, from dysentery and laryngeal tuberculosis.

Rudolph Myers, M.D., Huntingdon, Pa.; Bellevue Hospital Medical School, 1863; aged 77; a Fellow of the American Medical Association; died at his home, August 24, from toxic myocarditis.

Edward Johnson, M.D., Columbus, Neb.; Medical School of Maine, Portland, 1883; president of the First National Bank of Columbus; died in the Clarkson Hospital, Omaha, October 27.

Newton C. Davis, M.D., Kingman, Kan.; Homeopathic Hospital College, Cleveland, 1884; aged 61; formerly a member of the Kansas Medical Society; died at his home, about October 25.

Samuel A. Orentreich, M.D., Denver; University of Krakow, Austria, 1890; died in Detroit, October 23, from the effect of poison, self-administered, it is believed, with suicidal intent.

Robert Lee Ray, M.D., Monterey, Tenn.; University of Tennessee, Nashville, 1892; aged 52; a Fellow of the American Medical Association; died in his office, October 29.

Isaac B. Gallup, M.D., Willimantic, Conn.; Philadelphia University of Medicine and Surgery, 1869; aged 72; died at his home, August 2, from carcinoma of the bladder.

Levi A. Horn, M.D., Austin, Pa.; University of Louisville, Ky., 1894; a member of the Medical Society of the State of Pennsylvania; died at his home, about August 15.

Samuel O. Knapp, M.D., Frankfort, Ind.; Medical College of Ohio, Cincinnati, 1884; aged 59; died in Mulberry, Ind., September 20, from chronic interstitial nephritis.

Charles Z. Ellis, M.D., Berkeley, Calif.; California Eclectic Medical College, Los Angeles, 1891; aged 54; died in Berkeley, October 16, from carcinoma of the stomach.

F. N. Sheppard, M.D., Riverside Manor, Md., American College of Medicine, Philadelphia, 1865; aged 78; died at his home, near Crumpton, Md., October 14.

Andrew N. Falkenstein, M.D., Glen Rock, Pa.; College of Physicians and Surgeons, Baltimore, 1887; aged 63; died at his home, October 19, from nephritis.

Henry T. Fullerton, M.D., Kenton, Tenn.; Missouri Medical College, St. Louis, 1866; aged 77; died at his home, September 4, from cerebral hemorrhage.

Charles C. Dalton, M.D., Wiota, Wis.; Bennett Medical College, Chicago, 1903; aged 39; died in Madison, Wis., September 15, from pneumonia.

Thomas C. Van Tries, M.D., Bellefonte, Pa.; University of Pennsylvania, Philadelphia, 1868; aged 38; died in Pittsburgh, August 1, from pneumonia.

John G. Rogers, M.D., Cherrygrove, Tenn.; Vanderbilt University, Nashville, Tenn., 1875; aged 78; died at his home, July 14, from nephritis.

Merriken B. Lukens, Atlanta, Ga. (license, Georgia); a practitioner since 1871; aged 83; died at the home of his niece in Atlanta, October 22.

John R. Bartlett, Burlison, Tenn. (license, Tennesse, 1889); aged 61; a practitioner since 1880; died at his home, July 28, from angina pectoris.

Joseph George Church, M.D., Shenandoah, Pa.; University of Pennsylvania, Philadelphia, 1887; aged 52; died at his home, October 19.

Jesse B. Mitchell, Sneedville, Tenn. (license, Tennessee, 1889); aged 76; died at his home, August 22, from cerebral hemorrhage.

Joseph James Harrison, M.D., Loudon, Tenn.; University of Nashville, Tenn., 1854; aged 83; died at his home, October 25.

Charles Dingee, M.D., Burlington, N. J.; University of Pennsylvania, Philadelphia, 1887; died at his home, October 10.

Joseph Lewandowski, M.D., Boston, Mass.; University of Krakow, Austria, 1894; aged 53; died at his home, October 23.

Oran A. Dean, M.D., South Haven, Mich.; University of Buffalo, 1868; died at his home, October 19.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

IODEOL AND IODAGOL

Report of the Council on Pharmacy and Chemistry

Iodeol and Iodagol (formerly called Iodargol) are products of Viel and Company, Rennes, France, widely advertised in this country by David B. Levy, Incorporated, New York. The claim made for both preparations is that they depend on "colloidal iodin" for their action. They are put up in a number of forms, for instance:

"Iodeol Ampoules each containing 1 c.c. (20 centigrammes colloidal iodin in an oily vehicle)."
"Iodeol External, containing 50 per cent. colloidal iodine."
"Iodagol Ampoules, each containing 2 c.c. (50 centigrammes colloidal iodine in an oily vehicle)."

The claim is, that, the iodin being in the colloidal state, it has the properties of elementary iodin and thus the preparations may be used in concentrations and under conditions which would make the use of free iodin impossible. The products have been extensively and extravagantly advertised for use in a wide range of conditions. Thus Iodeol has been proposed in the treatment of:

"Pulmonary Tuberculosis"
"Laryngeal Tuberculosis."
"Glandular Tuberculosis"
"Tuberculosis of the Bones"
"Pneumonia, Broncho-pneumonia, and Congestive Conditions"
"Whooping Cough, Influenza, Asthma"
"Typhoid Fever"
"Syphilis"
"Obesity".

Iodagol, which is for external use, has been advised in the treatment of:

"Gonorrhea and its Sequelæ"
"Cystitis"
"Tetanus"
"Wounds complicated by gaseous gangrene"
"Burns"
"Old Suppurations, ulcers, abscesses, etc."
"Articular rheumatism"
"Abscess Alveolar"
"Pyorrhea Alveolaris"
"Stomatitis (Canker-Sores)."

Nearly two years ago the American agents requested the Council to consider Iodeol and Iodagol for admission to New and Nonofficial Remedies. The information submitted in regard to their character and composition was vague and indefinite, the pharmacologic information practically nil and the clinical data as voluminous as it was unconvincing.

On the basis of chemical, pharmacologic, bacteriologic and clinical investigation carried out under the direction of the referee and a study of the submitted evidence, the referee reported:

1. Iodeol and Iodagol do not contain the amount of iodin claimed.

2. The iodin is not present as elementary iodin, but instead the preparations behave similarly to the well-known organic iodin compounds such as iodized fats.

3. The therapeutic claims made for the preparations are exaggerated and unwarranted.

In view of his findings he recommended that Iodeol and Iodagol be declared inadmissible to New and Nonofficial Remedies for conflict with Rules 1 and 2 (misleading statements regarding composition and identification) and Rule 6 (unwarranted therapeutic claims). The Council adopted the recommendation of the referee, directing inclusion of the full report in the annual Council reports after submission to the manufacturer, and recommending publication of an abstract of this report in THE JOURNAL.

This report was brought to the attention of the American agent, David B. Levy, Inc., and through them to the French manufacturers, E. Viel and Company. The manufacturers have intimated that they will not file a reply to the report. The firm of David B. Levy, Inc., has decided to sever its connection with these products and to discontinue their sale.

W. A. PUCKNER, Secretary.

Referee's Report

Iodeol and Iodagol were submitted to the Council nearly two years ago as "electro-colloidal iodine" and with the claim that they produced all the antiseptic and other effects of ordinary iodin without any of its side actions. The referee has done much work on the subject, conducted a large amount of correspondence and has contended with long delays. He feels that the consideration of these products should be brought to a conclusion and accordingly he submits this report of their consideration. The following is a summary of the report, which is appended:

I. Discrepancy in Iodin Percentage.—The examination at the Chemical Laboratory of the American Medical Association, as well as that of the referee, shows that the various samples of Iodeol and Iodagol examined contained a little less than one-half of the total iodin claimed. These facts were reported to the American agent. After a lengthy delay a reply was received which presented a double excuse: (1) that the full amount of iodin had been added, whatever had become of it later; (2) that the claims were made for "colloidal iodin" and that this is not elementary iodin in the colloidal state, but a preparation of iodin containing only 50 per cent. of real iodin. Neither explanation can be taken seriously, as they are obvious quibblings. The referee concludes that the preparations are falsely labeled as to iodin content.

II. Nature of the Iodin Compound in Iodeol and Iodagol.—In the information sent the Council, Iodeol and Iodagol were defined as "A suspension of electro-chemical colloidal iodin in a vehicle of purified oil." Numerous inquiries have failed to elicit more specific information from the manufacturer or his agent. The statement of composition can mean only that the preparations contain free iodin (but in colloidal form) suspended in oil. No evidence to substantiate this claim has been submitted. (There is evidence that the preparations contain colloidal particles, but it does not indicate if this colloidal material is iodin, or a combination of iodin or indeed whether the colloid component contains any iodin.) The recent statements of the agent seem to concede that what they call "electro-colloidal iodin" contains only about 50 per cent. of real iodin, in other words that it is not "colloidal iodin" at all but a mixture or combination of iodin with some other unnamed substance. This, of course, is something very different.

Certain results reported from the American Medical Association's Chemical Laboratory suggest that the so-called "colloidal iodin" of Iodeol may be a combination of iodin with a volatile oil. The investigations of the referee indicate that the iodin exists in a rather resistant form or combination behaving altogether differently from ordinary free iodin, and rather resembling the behavior of iodin substitution products, such as iodized fats or phenols. Briefly, then, the recent admissions of the agents indicate that Iodeol does not contain "colloidal iodin" in a chemical sense, and there are indications that it does contain its iodin in a rather firm (chemical) combination.

III. Chemical Properties of Iodeol.—From a study of different specimens of Iodeol, the referee concludes that fresh specimens contain no free iodin and that old ones contain small amounts as a result of decomposition. Iodeol has the solubility characteristics of fats and fat-like compounds. The examination, as a whole, shows that Iodeol contains a peculiar and rather resistant form or combination of iodin. There is nothing in the chemical data that suggests that it could act differently from ordinary iodin compounds, such as iodized fats. It would not act as ordinary iodin.

IV. Pharmacologic Data.—The pharmacologic statements which were submitted were loose and apparently meaningless or misleading. In reply to questions submitted by the referee, the manufacturer finally had some work done and submitted a report by Jean Laumonnier. The referee was unable to confirm some of this work, and as a whole it does not appear materially to elucidate the action of Iodeol. From a consideration of the submitted evidence and as a result of his own work, the referee concludes that Iodeol does not behave like elementary iodin; it does not coagulate proteins and therefore is not irritant. It is presumably absorbed, but quite probably after chemical change; it is changed into iodid and, like organic iodids, is excreted somewhat more

slowly than when inorganic iodids are administered, but the difference does not appear important.

V. Antiseptic and Bactericidal Action.—Elementary iodin is considered a fairly powerful agent in these respects. The activity is presumably due to changes in the proteins, etc., of the bacteria, analogous to the effects which produce pain, irritation and necrosis of the tissue cells. Since the latter effect is not produced by Iodeol, it seems highly improbable, if not impossible, that it should act on bacteria like elementary iodin. It is entirely unjustifiable to credit the known antibacterial qualities of ordinary iodin to "colloid" iodin. This misrepresentation is especially prominent in the circular "Notable New Therapeutic Agents," as will be seen, for instance, from the following citations:

"Iodine has long been universally recognized as an antiseptic of extraordinary potency. Not only is it rapid and certain in its germ-destroying action, but it also possesses an attribute denied many other antiseptic agents, namely, the power to penetrate and impregnate the tissues. Other antiseptics, as is well known, act on the surface epithelium only."

"According to Kinnaman (JOURNAL A. M. A., Aug. 26, 1905), iodine is far superior to bichloride of mercury, a two per cent. solution killing streptococcus pyogenes in two minutes. Iodine does not coagulate albumin, and is very penetrating."

The citations imply that this "colloidal iodin" of Iodeol and Iodagol acts as an antiseptic like ordinary iodin, except that it is claimed to be more efficient by "diffusing" more readily. This is entirely unjustified and misleading. If Iodeol and Iodagol are really antiseptic, they must act by some other mechanism than that through which elementary iodin acts, and such antiseptic action would have to be demonstrated by direct observation and not assumed from the known action of free iodin.

Antiseptic and bactericidal effects are easily estimated by laboratory methods. Yet no evidence on this point appeared to have been available until the Council called for this. Laumonnier then carried out some experiments which were in turn submitted to bacteriologic control. The bacteriologist failed to obtain any results with some of the tests, and considered the other data of little value.

The claim that Iodeol and Iodagol have the antiseptic and bactericidal action of free iodin lacks proof and must be considered unwarranted and misleading in the extreme.

VI. Clinical Trials.—The manufacturers and agents of Iodeol presented many letters from physicians; but few, if any, of these gave evidence of careful, critical, controlled observations. They could not, therefore, be considered as acceptable evidence. The more important claims, letters and published papers, however, were submitted to clinical specialists collaborating with the Council, with the request that they examine these and conduct some clinical trials, if they considered it advisable. The results obtained in these preliminary trials did not appear sufficient to warrant further experimentation.

From a consideration of the evidence presented, the referee concludes that the claims made for Iodeol and Iodagol are unwarranted, exaggerated and misleading. He recommends that Iodeol and Iodagol be declared ineligible for New and Nonofficial Remedies for conflict with Rules 1 and 2 (misleading statements as to composition and identification) and with Rule 6 (unwarranted and misleading therapeutic claims). He further recommends that the Council authorize publication of the preceding summary of the consideration of Iodeol and Iodagol in THE JOURNAL and inclusion of the full report in the annual Council reports after submission to the manufacturer.

Garbage Saving at Army Cantonments.—Another practical demonstration of what may be done in the use of garbage is made by the War Department in the Army training camps. The garbage of thirteen of the cantonments will be sold to a contractor for feeding swine, yielding the government an annual price of $446,394. It is estimated that garbage waste from ten to fifteen soldiers will feed one hog, putting onto the animal 1 pound of weight per day. At this rate garbage from thirteen cantonments will produce 18,900,000 pounds of pork yearly. In cases where garbage can not be used for feeding, it will be treated for grease extraction and the tankage ground for stock food or fertilizer. The custom of burning garbage will be abolished altogether. The War Department will receive $240,000 annually for the manure from the horses and mules at Army cantonments.—*Weekly Bulletin.*

Correspondence

"DISORDERED ACTION OF THE HEART" IN BRITISH SOLDIERS

To the Editor:—The report on soldiers returned as cases of "disordered action of the heart" of the Medical Research Committee in England has recently been supplemented by reports of the detailed clinical studies made by members of the staff, contained in *Heart*, **6**, No. 4. The most striking features of these excellent and very detailed studies are, first, the negative conclusions as to the etiology and pathology of this syndrome, and, second, the positive conclusion that graduated exercises cure a large proportion of the patients.

These patients show certain symptoms which to my mind are most significant—breathlessness, and blood pressure and pulse reactions to exercise. The authors state that "the response of the respiratory rate to exercise is a very exaggerated one." Again, "None of our patients are capable of such effort (i. e., amounts of work healthy young adults are capable of): equal distress and similar pulse rates and systolic pressure are produced by smaller amounts of work or work done more slowly. It is clear that if we chose a given amount of work as a stimulus and apply the stimulus to healthy controls and to our patients, the latter react to the stimulus in an exaggerated fashion. The pulse rate rises much higher than in controls, and the high rate is longer sustained, the blood pressure rises higher, and the raised pressure is longer sustained than in controls: the summit of the blood pressure is not delayed,[1] however: breathlessness, fatigue and palpitation are also much more in evidence."

It seems to me very clear that the patients who presented the foregoing symptoms were suffering from a decreased cardiac reserve power. The fact that so many of them were cured by graduated exercises affords additional and convincing proof. The neurotic symytoms that were often present are not necessarily a sequence of the decreased cardiac reserve power, but probably are simply a concomitant. Very possibly they are caused by the same factors that produced the decrease in cardiac reserve power.

We frequently see these patients with decreased cardiac reserve power in civil life, and graduated exercises cure them. One half of the patients described in the report dated the onset of symptoms a number of years back. Infections of various kinds contracted during service immediately preceded the onset of symptoms in another large group. The cardiac reserve power is always lowered after any infection of moderate severity. Any one who has indulged in exercise too soon after a sojourn in bed with fever can appreciate the truth of this statement. The report takes cognizance of this etiologic factor when it states that "convalescent treatment should be more prolonged than is often the case; a graduated system of retraining seems most desirable."

A group of patients is described who suffered from precordial pain and in many instances hyperesthesia of the chest wall, both accentuated by exercise. The circulatory reactions of this group to exercise are not given except in one instance, probably because it was inadvisable to carry out exercise experiments on account of their effect on the pain. These patients are quite rare in civil life, and their subsequent histories would be of much value.

Objections may be made to my use of the term "cardiac reserve power." The heart's total capacity is made up of two component parts; one, the smaller, comprises the power expended in furnishing the requirements of the metabolism with the body at rest; the other, by far the larger, is utilized when physical work is performed. It is this potentially large component that is called into action by graduated exercises. Any expression which describes a definite function of a bodily organ has a perfectly legitimate use. In this instance the

1. The summit was not delayed because the authors in each experiment stopped increasing the work just as they were about to reach a "delayed rise." The controls were given from ½ to 4 times more work than the patients (comparing the maximum amounts given). Had the authors been a little more persistent they would have found the "summit of maximal pressure is delayed" exactly as they found it was in normal patients and with decidedly less work.

term "cardiac reserve power" denotes a most important function of the heart, the variations of which are matters of personal experience to every man who has gone through a course of physical training. Our inability to measure the heart's reserve power directly is not a reason for ignoring its existence.

When the reserve power is impaired, not from organic disease of the heart, but from any one of numerous causes, there is presented a characteristic clinical picture which to my mind the authors of this report have described quite accurately. The neurotic symptoms from which these patients suffer do not alter the significance of the respiratory and circulatory reactions to work or the significance of the curative effect of graduated exercises.

THEODORE B. BARRINGER, JR., M.D., New York.

THE CARREL-DAKIN TREATMENT

To the Editor:—I am enclosing a letter which I wrote recently to Dr. William H. Welch in regard to the Carrel method of wound treatment which is at present so actively under discussion. I believe that it presents a point of view that might very well be presented to the profession at this time through the columns of THE JOURNAL.

ARTHUR DEAN BEVAN, M.D., Chicago.

My Dear Dr. Welch:

I want to write you about a problem which I think is of considerable importance to the Medical Corps at this time and in which I believe you are interested. The problem is that of the Carrel method of wound treatment. I of course have followed in the past two years the surgical literature on this subject with a great deal of interest. At the meeting of the American Surgical Association this spring, Dr. Charles Gibson of New York read a paper on this subject, and at the American Medical Association meeting in June, Dr. William Sherman of Pittsburgh discussed the subject before the surgical section. They both presented the subject in a most enthusiastic way and made very startling claims for the new method. These were so out of keeping with the reports that I have been able to obtain from well qualified surgeons of large experience who had the opportunity of employing it in their military hospital work, and were in such opposition to the generally accepted views of surgical pathology and wound repair, that I have taken the pains to go into the subject pretty fully with an attempt to analyze the facts and arrive at a judicial opinion as to its value.

When I was in Washington during the first two weeks in October, I found that classes of men were being sent to the Carrel Hospital in connection with the Rockefeller Institute in New York for the purpose of taking short courses in the Carrel-Dakin method. On leaving Washington I went to New York and spent one morning at the Carrel Institute and had the opportunity of obtaining a syllabus of the work that is being done in these courses, of seeing their hospital and laboratories, and of witnessing one operation done by Josh Hartwell, not under the supervision of Carrel himself, but of a French army officer who is at the hospital and who has been with Carrel for some time.

I found in discussing personally with several surgeons and from letters and reports which I have had an opportunity of reading from Dr. James Neff, who was in charge of a base hospital of a thousand beds or more for a year on the western front, from a report by Dr. George Crile, from a talk with Dr. James Burry, who has had the treatment tried for a number of months in his accident work in the Illinois Steel Company, from the statements made by Fred Murphy and reports from Joe Blake, and personal communication from Sir Berkeley Moynihan, that they and many surgeons were skeptical as to its practical value. I did not venture, however, to form an opinion of my own until I had the opportunity during the last week of reading Carrel's book and analyzing the problem from this report of his own work. I should like to make clear that the views that I express in this letter are not obtained from any hearsay evidence but from an analysis of Carrel's own views expressed in this book. One of the important parts of modern surgery and one of the things that has made modern surgery possible is that division of the science that is known as surgical pathology. By this I mean a division of pathology that has been specially studied and developed by scientific clinical surgeons. It is only necessary for me to state that the development of modern surgical pathology rests on the work of Lister, of Paget, of Billroth, of such men in this country as Fenger and Senn, and is well presented today by the work done by Lexer and presented in a book which is known as Lexer's "General Surgery." From the time of Lister until now, scientific clinical surgeons have studied the special pathologic problems that were involved in the science and practice of surgery. The problems of wound repair, of infection and the processes by which an organism frees itself from infection, separating the living from the devitalized tissues, the extrusion, digestion and encapsulation of foreign bodies, etc., have been studied with the greatest possible care, and many of these problems worked out as thoroughly both experimentally and clinically as in any field of medical science. Analyzing the Carrel work from the standpoint of what is known of modern scientific surgical pathology, I am forced to the conclusion that his work does not at all meet the requirements essential to a piece of scientific research. I take it for granted that the chemical problems involved have been scientifically handled; but the problems of surgical pathology have been handled in a superficial, incomplete way without the necessary controls, and frankly the conclusion is forced on me that Carrel's part of the work is not scientifically proved and cannot be accepted.

It is evident as one analyzes Carrel's statements that it is a piece of work done by a laboratory man who does not understand the clinical problems involved, who either does not know or ignores many essential facts, and whose conclusions as to the miracle working effects of the Dakin solution in his scheme of treatment have about as little basis in fact as the exaggerated claims that have been made for "ambrine" in the treatment of burns. The trouble is that this problem has not been attacked in the right way. A problem of this kind should be attacked by the joint labor of a number of teams, each one composed of a thoroughly scientific clinical surgeon who is well trained in the science of surgical pathology, in conjunction possibly with such a laboratory worker as Carrel, and with the assistance of competent chemists and bacteriologists. It should be attacked in the most scientific and broadest possible way and with the necessary controls, controls that would enable the investigators to determine, first, the results from the employment of the accepted surgical methods of surgical technic as applied, for instance, to a shell wound of the thigh with compound fracture of the femur, including the earliest possible removal of foreign bodies and of devitalized tissue, the complete excision of the wounds with immediate closure in some cases and with free drainage, moist dressing with sterile water in others, the immobilization of the limb and the best possible general care of the patient, and the results of such wound treatment which could be designated as the control compared with similar cases treated with the employment of various antiseptic solutions, including the Dakin fluid. These experiments to be of value would have to be on a considerable scale. I am personally so thoroughly convinced that wound healing and the freeing of tissues and an organism from infection depends so largely on the life processes in the living cells at the point of injury and infection and the reaction of the sum total of living cells that make up the entire individual, and that the important thing that a surgeon can do is to eliminate noxious influences and place the particular part injured and the entire individual in a condition where this wound repair and elimination of infection can go on uninterfered with as little as possible, that I can see but a limited value in the local employment of antiseptics of any kind on the surface of the infected wound. That any antiseptic has any healing property, that any antiseptic is miracle working in the handling of wounds, is inconceivable.

Looking at the problem in a broad way, if we could express in figures the value of the means at our disposal of treatment of the shell and rifle wounds of this war, certainly much more than 90 per cent. of the sum total of the value of wound treatment would consist of the proper employment of the well known and generally accepted rules of surgical technic. Granted that the remaining 5 or 10 per cent. depended on the proper employment of antiseptic solutions, one may be very sure that the choice of one of a half dozen thoroughly tried out antiseptics, such as boric acid, aluminum acetate, Dakin solution, dichloramin-T, hydrogen peroxid, phenol and iodin, would not make any enormous difference in the sum total of the end-results.

If the above statements are true, it would be a serious mistake for the government medical services to adopt the Carrel treatment as a great and wonder-working improvement in our surgical technic, and to force a complicated,

time-consuming, expensive plan of treatment on our medical service, possibly to find within a short time that it is of little or no value. As I have studied Carrel's book and attempted to form a judicial opinion of this problem, I am forced to the conclusion that, like Koch's lymph, Bier's hyperemia and the vaccine therapy for acute infections, the Carrel treatment will have a short period of popularity among that small corps of enthusiasts of the type that is easily carried away by new, startling methods, and like the Bier's hyperemia and the vaccine therapy for acute infections, will shortly disappear, consumed in the fire of actual experience and scientific research.

I am venturing to write this to you because I know how much you are interested in the sound, practical, successful organization of the Medical Department for this war, and because I know how deeply interested you are in the success of the Rockefeller Institute. I think this matter should be handled in a practical way in our army organization. The Carrel treatment cannot and should not be accepted at this time as a demonstrated truth. It should be accepted as a method that is experimental and under trial. It should not be adopted by the United States medical service to the exclusion of other methods. If possible, a number of base hospitals officered by strong corps of men should try out thoroughly, in a scientific way, the various methods of wound treatment that seem to offer possibilities of adding to our present knowledge in this particular field of surgical pathology. The very exaggerated claims which have gotten into our medical journals and even into the lay press should be disparaged by those who are in a position to control the situation.

Very truly yours,

ARTHUR DEAN BEVAN.

VARIATIONS IN RESISTANCE OF BLOOD CELLS TO HEMOLYSIS

To the Editor:—In conducting experiments with preserved complement, I have found that the complement apparently varies in strength from week to week, fluctuating from strong to weak and strong again, sometimes stronger the third week than the first.

I have found this to be due to a factor, hitherto unnoted, namely, the marked variation in resistance of different batches of blood cells to hemolysis. I want, therefore, to issue this note of warning to all serologists utilizing my complement preservative (THE JOURNAL, Sept. 22, 1917, p. 973): *It is necessary to retitrate the complement with each new supply of blood cells.* For example, one batch of blood cells required 0.175 of complement to complete the hemolytic system. Another batch of cells, used two days later, required only 0.1. Still another batch of cells, used two days following the latter, required 0.125 of this same complement for the Wassermann tests.

B. W. RHAMY, M.D., Fort Wayne, Ind.

BELGIAN AND FRENCH PHYSICIANS' FUND

To the Editor:—I beg leave to report the following contributions which have been made for the relief of the Belgian and French civilian physicians to enable them to reestablish themselves in their looted or even destroyed offices now made accessible by the retreat of the German army. This is in addition to the sum of $920 reported in THE JOURNAL, October 13. The total, including interest on the deposits, is $1,127.28. One half of this, $563.64, I have forwarded to Dr. A. Depage at La Panne, Belgium, through the Belgian Relief Committee, 1524 Walnut Street, Philadelphia. The other half I have forwarded to M. Charles Halais, 15 boulevard de Latour-Maubourg, Paris, for the French civilian doctors, through Mrs. Sara Y. Stevenson of the French relief here, 1122 Walnut Street.

I have also received instruments from the doctors named and also 5,000 disinfected fiber spoons from the Sanispoon Sales Co., Philadelphia. These disinfected and cheap spoons will be valuable to the civilian doctors in the cases of various contagious diseases, and they are so cheap that they can be used and thrown away.

I have to thank Charles Lentz & Sons, Philadelphia, for their very generous help in repairing and packing all the instruments. The value of the box sent to Belgium they place at $500. The box for the French doctors is not yet ready for packing.

Since this list has been made up and the checks sent several more contributions in money and instruments have been received. These will be acknowleged later. I hope for much more in money and in instruments.

Our colleagues when they return to their desolated and looted offices will bless their American colleagues for this timely help. Suppose the tables were turned and *we* were the sufferers. How grateful we should be!

W. W. KEEN, M.D., Philadelphia.

SUBSCRIPTIONS IN CASH

Dr. W. J. Stapleton, Detroit	$ 5.00
Dr. Myrtle A. Hoag, Buffalo	10.00
Dr. Alfred Gordon, Philadelphia	5.00
Dr. E. H. Noble, Clemons, Iowa	5.00
Estate of Dr. F. A. Stillings, Concord, N. H., per Mrs. Stillings and her daughter, Mrs. E. C. Hirst	100.00
Dr. Clara A. March, Buffalo	15.00
Dr. S. M. Strohecker, Portland, Ore.	5.00
Dr. J. W. Preston, Roanoke, Va.	10.00
Dr. James M. Patton, Omaha	50.00

DONATION OF INSTRUMENTS

Dr. C. B. Crume, Bloomfield, Ky.
Sanispoon Sales Company, Philadelphia.
Dr. A. T. Cooper, Fort Bliss, Texas.
Dr. Myrtle A. Hoag, Buffalo.
Dr. E. H. Noble, Clemons, Iowa.
Dr. S. M. Strohecker, Portland, Ore.
Drs. W. E. Leonard, George M. Haywood, W. H. May and J. S. Reynolds, Minneapolis, Minn.
Dr. M. T. Clark, Walters, Okla.
Dr. Frank H. Jackson, Houlton, Maine.
Dr. Eugena Caravia, New York.
Dr. J. T. Foley, Lewistown, Mont.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

LITERATURE ON WAR NEUROSES

To the Editor:—I should like to have the titles and publishers of books on mental and nervous diseases pertaining to war conditions, and in particular the literature on the subject of predisposition to these diseases in persons entering the military service.

C. W. MACK, M.D.,
Lieutenant, M. R. C., U. S. Army, Fort McDowell, Calif.

ANSWER.—

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TYPHOID IN THE WAR OF 1898

To the Editor:—1. How many cases of typhoid were there in the Army during the Spanish-American War? How many deaths from this disease?

2. To what degree is typhoid vaccine a preventive?

J. E. BRINKMAN, M.D., Waterloo, Iowa.

ANSWER.—1. In our war with Spain there were 20,738 cases of typhoid fever among 108,000 men, all occurring within three

and one-half months. Typhoid fever caused nine tenths of all deaths among troops in the United States in 1898.

2. Antityphoid vaccination has demonstrated itself to be an almost certain preventive of typhoid fever. For comparison with the foregoing figures, on October 19, there were practically 1,000,000 soldiers in camp in the United States, all of whom had been vaccinated or were undergoing vaccination against typhoid fever, with a total incidence of twelve cases of this disease.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

DELAWARE: Wilmington, Dec. 11-13. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Jacksonville, Dec. 4-5. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.

KENTUCKY: Louisville, Dec. 4-6. Sec., Dr. A. T. McCormack, Bowling Green.

LOUISIANA: New Orleans, Dec. 6-8. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

MARYLAND: Baltimore, Dec. 11. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

MINNESOTA: St. Paul, Jan. 2-4. Sec., Dr. Thomas McDavitt, 741 Lowry Bldg., St. Paul.

MISSOURI: St. Louis, Dec. 17-19. Sec., Dr. George H. Jones, 206 Washington St., Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: New York City, Jan. 9-17. Assistant Sec., Mrs. Isabelle F. Tiers, 310 Real Estate Bldg., Broad and Chestnut Sts., Philadelphia.

NEW HAMPSHIRE: Concord, Dec. 10-12. Sec., Dr. W. S. Crosby, Beacon Bldg., Manchester.

NORTH DAKOTA: Grand Forks, Jan. 1. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, Dec. 4-6. Sec. Pro-tem., Dr. Herbert M. Platter, 185 E. State St., Columbus.

OREGON: Portland, Jan. 1. Sec., Dr. Herbert S. Nichols, Portland.

RHODE ISLAND: Providence, Jan. 3. Sec., Dr. B. U. Richards, State House, Providence.

TEXAS: Dallas, Nov. 20-22. Sec., Dr. M. F. Bettencourt, Mart.

VIRGINIA: Richmond, Dec. 11-14. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.

WASHINGTON: Spokane, Jan. 1. Sec., Dr. C. N. Suttner, Baker Bldg., Walla Walla.

WEST VIRGINIA: Clarksburg, Nov. 21-23. Chairman, Dr. S. L. Jepson, Capitol Bldg., Charleston.

California April Examination

Dr. C. B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at Los Angeles, April 9-13, 1917. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 56 candidates examined, 40, including 27 osteopaths, passed, and 16, including 12 osteopaths, failed. Sixty-two candidates were licensed through reciprocity. Twelve candidates were granted drugless practitioner certificates. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons of San Francisco		(1915)	85.7
Hahnemann Medical College of the Pacific		(1916)	75.5
Leland Stanford Junior Univ. (1914) 88.2; (1915) 89;		(1916)	88.7
Chicago College of Medicine and Surgery		(1916)	81.1
Rush Medical College		(1916)	87.3, 88.2
Columbia University		(1914)	76.8
Jefferson Medical College of Philadelphia		(1916)	84.4
Vanderbilt University		(1913)	76.2
Laval University		(1911)	81
Nagasaki Special Medical School		(1905)	79.5
	FAILED		
California Eclectic Medical College		(1915)	72.2
Loyola University		(1916)	73.5
St. Louis College of Physicians and Surgeons		(1907)	51.2
Kiota Imperial University		(1910)	23.2

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama		(1910)	Arizona
Denver and Gross College of Medicine		(1909)	Washington
University of Colorado		(1912)	Colorado
American Medical Missionary College		(1900)	Illinois
Bennett College of Eclectic Medicine and Surgery		(1903)	Wisconsin
Bennett Medical College		(1914)	Illinois
Chicago College of Medicine and Surgery		(1912)	Arizona
		(1914)	(1915) Illinois
Chicago Medical College		(1873)	Colorado
College of Physicians and Surgeons, Chicago		(1902)	Iowa
		(1905)	Illinois
Hahnemann Medical College and Hospital		(1903)	Nebraska
Northwestern University		(1894)	Idaho; (1897) Wisconsin
		(1907)	Penna.
Rush Medical College		(1878)	Illinois; (1902) Iowa
Keokuk Med. College, Coll. of Phys. and Surgeons		(1905)	Iowa
State University of Iowa College of Medicine		(1873)	Illinois
		(1902)	Minnesota; (1903) Iowa
University of Kansas		(1910)	Kansas
Kentucky School of Medicine		(1892)	Ohio; (1893) Kentucky
Louisville Medical College		(1887)	Colorado
Medical School of Maine		(1910)	Maine
Baltimore Medical College		(1898)	New York; (1900) Kansas
Detroit College of Medicine		(1902)	Michigan
University of Michigan Homeo. Medical School		(1899)	Nebraska
University of Michigan Medical School		(1882)	Michigan
Minneapolis College of Physicians and Surgeons		(1907)	N. Dakota
Barnes Medical College		(1909)	Illinois
Marion-Sims College of Medicine		(1899)	S. Dakota
Medico-Chirurgical College of Kansas City		(1900)	Missouri
Missouri Medical College		(1887)	New York
St. Louis University		(1911)	Illinois
University Medical College of Kansas City		(1902)	Kansas
John A. Creighton Medical College		(1909)	Nebraska
Lincoln Medical College		(1901)	Nebraska
University of Nebraska		(1910)	Nebraska
Columbia University		(1900)	New York
Cornell University		(1899)	New York
New York Homeo. Medical College and Hospital		(1907)	New York
Cleveland College of Physicians and Surgeons		(1899)	New York
Eclectic Medical Institute		(1889)	Iowa
Homeopathic Hospital College		(1880)	Ohio
Miami Medical College		(1890)	Illinois
Toledo Medical College		(1897)	N. Dakota
Western Reserve University		(1907)	Ohio
University of Oregon		(1906)	Washington
University of Pennsylvania		(1907)	Penna.
University of Pittsburgh		(1908)	Illinois
Memphis Hospital Medical College		(1894)	Tennessee
University of Tennessee		(1914)	Tennessee
Milwaukee Medical College		(1897)	N. Dakota
Queen's University		(1885)	Washington
McGill University		(1903)	Mass.
University of Berlin		(1883)	New York
University of Palermo		(1900)*	Penna.
University of Rome		(1900)	New York

* Official information from the University of Palermo says this candidate is not a graduate of that university.

Arkansas May Examination

Dr. T. J. Stout, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, May 8-9, 1917. The examination covered 12 subjects, and included 120 questions. An average of 75 per cent. was required to pass. Of the 45 candidates examined, 40 passed and 5 failed. Six candidates were granted reregistration certificates. Twenty-eight candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas (1917) 75, 80.5, 80.7, 81.3, 82.3, 82.7, 83.2, 83.5, 83.7, 84.6, 84.8, 87.1, 87.2, 88.2.			
George Washington University		(1908)	84.6
Louisville Medical College		(1877) 81.4; (1905)	93
Meharry Medical College (1916) 75, (1917) 79.4, 82.6, 87.7.			
University of Tennessee (1917) 78.4, 81.2, 82.2, 85.1, 85.2, 85.5, 85.5 85.8, 86.3, 86.3, 86.6, 86.8, 87.2, 88, 88.2, 88.8, 88.9, 89.			
Baylor University		(1910)	78.7
	FAILED		
Birmingham Medical College		(1915)	72.4
College of Phys. and Surgs., Little Rock (1908) 58.2;		(1910)	52.6
University of Arkansas		(1907)	61
Vanderbilt University		(1892)	15.7

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Arkansas Industrial University		(1896)	Texas
Chicago College of Medicine and Surgery		(1907)	Illinois
Hospital College of Medicine		(1900)	Kentucky
Louisville and Hospital Medical College		(1908)	Kentucky
Louisville Medical College		(1903) Mississippi; (1907)	Kentucky
University of Louisville		(1907)	Mississippi
Tulane University of Louisiana		(1888) (1891)	Mississippi
		(1915)	Louisiana
College of Physicians and Surgeons, Baltimore		(1891)	Tennessee
Memphis Hospital Medical College (1898) (1898) (1901) (1904) (1905, 2) (1909) Mississippi; (1908) (1910) Tennessee.			
Sewanee Medical College		(1899)	Mississippi
University of Nashville		(1906) (1908)	Mississippi
Universities of Nashville and Tennessee		(1910)	Mississippi
University of Tennessee		(1909) Tennessee; (1916)	Mississippi
Vanderbilt University		(1915) Alabama; (1916)	Mississippi

Connecticut Eclectic July Examination

Dr. James E. Hair, acting secretary of the Connecticut Eclectic Medical Examining Board, reports the written examination held at New Haven, July 10, 1917. The examination covered 10 subjects, and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Kansas City College of Medicine and Surgery (1917) 81, 86, 88.			
Eclectic Medical College		(1917)	86

Book Notices

POLIOMYELITIS IN ALL ITS ASPECTS. By John Ruhräh, M.D., Professor of Pediatrics in the University of Maryland Medical School and the College of Physicians and Surgeons, and Erwin E. Mayer, M.D., First Lieutenant in the Medical Reserve Corps, United States Army. Cloth. Price, $3.25. Pp. 297, with 120 illustrations. Philadelphia: Lea & Febiger, 1917.

The great epidemic of poliomyelitis of 1916 in New York and in the East generally has been productive of several books concerning this disease. This book contains an excellent historical review of the subject, illustrated with reproductions from some of the first monographs on the subject. The section on pathology follows the usual lines. Especial interest attaches to the discussion of the nature of the virus, a question now the subject of rather interesting argument. The authors consider literature up to July, 1917, and finally conclude that it is reasonably safe to state that the streptococci and diplococci found by various investigators are not the causal agents of the disease. The discussion of epidemiology and classification of the various types is excellent. The chapter on paralysis is illustrated with photographs of the different types of paralysis. A chapter is devoted, very properly, to the technic of lumbar puncture, a much needed lesson. Other chapters concern the diagnosis and prognosis. By far the larger portion of the book is devoted to treatment, which adds to the practical value of the work. The authors have very thoroughly covered most of the articles on treatment that appeared in periodical literature during the recent epidemic. The exceedingly valuable work of Lovett, leading to muscle training and exercises, is outlined in detail. The book concludes with a chapter of anatomic and physiologic reminders, and a complete list of all the epidemics from which the world has suffered. It is an excellent book, not only for those especially interested in poliomyelitis, but also for any physician who wishes to be thoroughly informed on this important disease.

OBSTETRICS FOR NURSES. By Charles B. Reed, M.D., Obstetrician to Wesley Memorial Hospital, Chicago. Cloth. Price, $2.50. Pp. 374, with 130 illustrations. St. Louis: C. V. Mosby Company, 1917.

The author has prepared a practical and complete manual of obstetrics for nurses. The subject is taken up in the usual order, a small amount of space being devoted to anatomy and physiology, followed by a discussion of normal and abnormal pregnancy, labor and puerperium; operations; complications; infection; a large section on the care of the child and infant feeding; an extensive list of diets and formulas; solutions; a therapeutic index, and a glossary. The book is well illustrated. It is interesting to find that the author recommends morphin and scopolamin for the first stage of labor, and gas for the second stage, with a change to chloroform and ether just before the completion of the second stage. The section on the care of the child is hardly up to the standard of the first part of the book. The author recommends a mixture of asafetida or whisky and hot water for attacks of colic. The therapeutic index might better have been omitted, especially since the pharmacology of several of the drugs hardly agrees with modern ideas, including the fact that at least three proprietary preparations are mentioned for which pharmacopeial preparations might better have been substituted. The increase in the cost of paper may be responsible for the fact that at least three different qualities of paper are used in the book. All in all, the book is to be recommended as a manual for the obstetric nurse.

SANITATION PRACTICALLY APPLIED. By Harold Bacon Wood, M.D., Dr.P.H., Assistant Commissioner, West Virginia State Department of Health. Cloth. Price, $3 net. Pp. 473, with illustrations. New York: John Wiley & Sons, 1917.

This was written, the author states, as a practical guide for the field practice of sanitation. Omitting most of the details of analysis and examination from the laboratory side, which can be found in the larger treatises on hygiene and preventive medicine, the author covers a large field in such a manner that not only the physician and public health officer but also the layman will profit by reading the book. The opening chapter states the need for public health work, and maps the organization of a health department. In his discussion of the laboratory, it is interesting to note that Dr. Wood believes laboratory examinations for syphilis and gonococcal infections not made to determine quarantine are not the work for the public health laboratory. Statistics are reviewed in the second chapter. The third chapter reviews the latest methods of control of each of the communicable diseases. In considering Behring vaccination in diphtheria, a brief description of the methods would make the discussion clearer to the average reader. The author in successive chapters discusses child welfare, school hygiene, and the inspection and preservation of foods, giving a separate chapter to milk. Under water supplies are described the various modes of protecting and purifying water. Sewage disposal describes the care of sewage from the house to its final disposition, comparing the different methods of treatment. Industrial and occupational diseases are treated under hygiene of the home and factory. With our present knowledge of the rôle played by lower forms of animal life in transmitting disease, the chapter on the destruction of insects that transmit disease is especially timely. Methods also for destroying ground squirrels and our most deadly and expensive pest, the rat, are described. The last chapter is of particular interest to public health officers in that it outlines courses for interesting and teaching the people their part in conserving the health of the community.

AN INDEX OF DIFFERENTIAL DIAGNOSIS OF MAIN SYMPTOMS. By Various Writers. Edited by Herbert French, M.A., M.D., F.R.C.P., Physician, Pathologist and Lecturer, Guy's Hospital. Second Edition. Cloth. Price, $10 net. Pp. 912, with 343 illustrations. New York: William Wood & Co., 1917.

This book, which covers medicine in all its branches, is the combined work of twenty-three well-known English physicians and surgeons. The symptoms are arranged in alphabetical order, the symptom being named and followed by a discussion as to the possible diagnosis in the presence of the symptom discussed. Because of its size, it is impossible to review all of the various sections of the book critically. It is well printed on enameled paper of excellent quality. There are 306 good halftone illustrations and thirty-seven colored plates. The final 150 pages are devoted to an index in which main topics are distinguished from notes and mere mention of the subjects discussed. This index in itself is a thought producer; for example, a reference to the main heading is followed by an outline of the possible diagnosis attached to this symptom.

CONGENITAL WORD-BLINDNESS. By James Hinshelwood, M.A., M.D., F.R.F.P.S., Lecturer on Ophthalmology in the Glasgow Western Medical School. Cloth. Price, 4 shillings net. Pp. 112. London: H. K. Lewis & Co., Ltd., 1917.

This is not only a valuable and convenient monograph for those interested in the subject, but so far as we know the only collective work in this restricted field. First, the author gives an excellent description, with illustrative cases, of acquired word-blindness. A brief history of our knowledge of this particular defect as a congenital condition and a statement of the symptomatology follow. Cases are then reported. Finally there is an account of the syndrome as a family or hereditary occurrence, and a consideration of prognosis and treatment. The book should be on the shelves of every neurologist and pediatrician, and the principal features of the syndrome in a compartment of his memory.

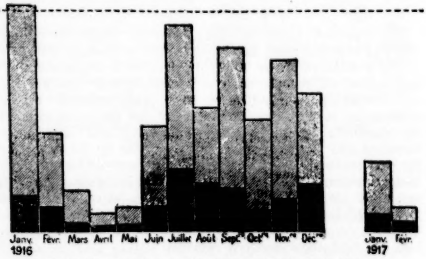
BIBLIOGRAPHY OF TITLES ON POLIOMYELITIS CONTAINED IN THE SUPPLEMENTARY CARD CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE. 1908-1917. Compiled by the Medical Department of the American Research Institute (May 15, 1917). Paper. Price, $5. Pp. 80. Washington: American Research Institute, 1917.

This bibliography supplements the references in Volume 13 of the Index Catalogue of the Library of the Surgeon-General's Office published in 1908. It contains approximately 1,500 titles of books and articles, and in the arrangement of the articles and in the citation of the references the general style of the Index Catalogue is followed. The American Research Institute will issue quarterly a supplement to this bibliography at $1 for every 500 titles.

Social Medicine, Medical Economics and Miscellany

Share of Vaccination Against Typhoid and Paratyphoid in the Disappearance of These Diseases in the Macedonian Campaign

P. Armand-Delille, Paisseau and Lemaire call attention to the success of the vaccinations in reducing typhoid and paratyphoid among the troops in the Saloniki region, the *armée d'Orient*, as they call it. They emphasize first the almost exclusive limitation of the cases of typhoid to the nonvaccinated, and, secondly, the almost complete disappearance of paratyphoid after the vaccine included both the paratyphoid A and B bacilli as well as the typhoid. Their figures include the entire Saloniki region and show the proportion per thousand men. The large number of cases in the summer months was due to the fatigues of the occupation of Macedonia and an extensive offensive. The mixed vaccine was not obtained until June, and was not generally used until toward the close of 1916. The effects are shown best by comparing the



Typhoid and paratyphoid after combined vaccination.

records for January, 1916 and 1917, although the troops at the later date were undergoing greater hardships than the year before. The total number of cases of typhoid, January, 1916, was 0.20 per thousand men, and of paratyphoid, 0.85. In January, 1917, the proportions were 0.09 typhoid and 0.22 paratyphoid, while in February the figures were respectively 0.05 and 0.06 per thousand men.

Report of Rockefeller Foundation

The annual report of the Rockefeller Foundation for 1916 covers three of the chief activities of the foundation: the work of the International Health Board, the China Medical Board and the War Relief Commission. The International Health Board during the period named began work in Siam, Ceylon, Salvador and Brazil in cooperation with the governments of those countries for the relief and control of hookworm disease. This work also included activities in eight of the Southern States and fifteen foreign countries, and arrangements have been made to begin similar work in the Fiji Islands, Queensland and elsewhere. The report also includes the work of the Yellow Fever Commission headed by Surgeon-General Gorgas, which made a survey of the yellow fever situation in South and Central America. This commission found that Guayaquil, Ecuador, was the chief focus of the spread of yellow fever, with certain portions of the Carribbean Coast of South American and Eastern Brazil as points to be carefully watched. Intensive experiments were carried out in circumscribed areas in the Southern States, looking to the control of malaria. Three of these experiments were completed in 1916 with promising results, showing the feasibility of malarial control.

The China Medical Board, to promote the development of a comprehensive and efficient system of medicine in China, in addition to appropriations to existing medical schools and missionary organizations throughout China, voted to establish a medical school in Shanghai; a premedical school in Pekin for the preliminary education of students who are to take up the medical course, it being found that the scientific courses in existing Chinese schools are not sufficiently advanced to prepare students for the medical courses, and a Red Cross hospital in Shanghai. The services of Dr. Henry S. Houghton, formerly dean of the Harvard Medical School of China, were arranged for from July 1, 1916. He is to have charge of the Red Cross hospital, and will cooperate with Mr. Greene in directing the board's activities in China.

The foundation and the General Education Board have pledged a million dollars each toward the development of a center of medical education in connection with the University of Chicago; also in cooperation with the authorities of Johns Hopkins University an appropriation of $267,000 was made to establish in that university a school of hygiene and public health, which opened in October, 1917, with Dr. William H. Welsh as director. This school is intended to fit men for a public health career.

Medicolegal

Trained Nurses as Anesthetists, and the Practice of Medicine

(*Frank et al. vs. South et al., State Board of Health (Ky.), 194 S. W. R. 375*)

The Court of Appeals of Kentucky reverses a judgment that was rendered in favor of the plaintiff members of the state board of health, the court being of the opinion that defendant Hatfield, a trained and licensed nurse, in the performance of services as an anesthetist for defendant Frank, a duly licensed physician and surgeon who limited his practice to surgery, was not engaged in the practice of medicine, within the meaning of the statute laws on that subject.

The court says it has never heretofore been called on to define the term "the practice of medicine" as defined in the present statute, or to determine what things were or were not within the meaning of that act. While the practice of medicine is one of the most noble and learned professions, it is apparent that such a construction ought not to be given to the statute which regulates the profession that the effect of it would be to invade the province of the professions of pharmacy, dentistry or trained nursing, all of which are professions which relate to the alleviation of the human family of sickness and bodily afflictions, and to make duties belonging to those professions also "the practice of medicine" within the meaning of the statute. Neither should such a construction be given to it as to deprive the people from all service, which could be rendered to them in sickness and affliction, except gratuitious service, or else by licensed physicians, unless the legislature intended that such should be the result of the enactment of the statute.

As used in the present statute, the words "treatment of any human ailment or infirmity by any method" mean only to undertake the cure of any ailment or infirmity by some method, and it is clear that the legislative authority so understood it when it enacted the statute. To say that the term "practice of medicine" means the "treatment of any human ailment or infirmity by any method" is only an equivalent to saying that the practice of medicine shall be construed to be the attempt to effect the cure of such ailment by the application of some method, without regard to the method used. To do this it is necessary that the one undertaking the practice of medicine or to treat any human ailment or infirmity for the purpose of effecting a cure or to alleviate suffering arising from it by a method other than a treatment by medical agencies must necessarily do the things which are necessary to be done by one undertaking to practice medicine by medical agencies alone, and that is, he must make such a diagnosis of the symptoms of the ailment to determine what the ailment is. He must furthermore determine what the remedy should be and how it should be administered and when it should be administered, and then to administer the remedy, either in

person or by directions to some one who is associated with the patient. It was contended that the language "the treatment of any human ailment or infirmity by any method" was enlarged by the language preceding it: "To treat the sick or injured or in any way discharge the duties usually performed by physicians, whether by medical, surgical or mechanical means"; but, construing all of the language of the subsection together, it is evident that "or in any way discharge the duties usually performed by physicians" must necessarily mean the duties usually performed by physicians in the practice of medicine at the time of the enactment of the statute and as understood at that time. The things usually performed by physicians which are not the practice of medicine are not included or intended to be included in the act.

It is the duty of the surgeon who would undertake a surgical operation to make a diagnosis of the symptoms of the patient to determine his ailment and the remedy necessary, and, if he determines that an anesthetic is necessary for the performance of the operation, to determine what anesthetic is necessary and the manner of its administration, and to give the necessary directions for so doing and to supervise and direct its giving, and in the selection of an assistant to administer the anesthetic he should exercise the same degree of knowledge, skill and care as he is required by law to exercise in the performance of any part of the operation.

Insufficient Evidence of Malpractice in Treatment of Injured Wrist

(Dishman vs. Northern Pacific Beneficial Association et al. (Wash.), 164 Pac. R. 943)

The Supreme Court of Washington reverses a judgment that the plaintiff recovered in this case, against one of the surgeons of the beneficial association, for alleged malpractice and negligence on the part of the surgeon in failing to operate on and suture the injured extensor tendons of the plaintiff's left hand and wrist. The court says that of the eight physicians and surgeons testifying, other than this defendant, three were of the opinion that the extensor tendons were severed, that this defendant should have operated on the injured parts and sutured the extensor tendons, and that in failing to do so he was guilty of such unprofessional and unskilful practice as amounted to negligence, notwithstanding the carpal bones of the wrist were seriously disturbed in their setting, some of them were cracked, and the outer flesh of the wrist and hand was not broken. The other five witnesses, of apparent equal skill and learning in their profession with the foregoing three, were of the opinion that the extensor tendons were not severed, and that this defendant not only did not fail to exercise a reasonable degree of skill and judgment in not operating on the injured parts, but that his treatment of the injury was in their opinion such as the judgment of a skilful and prudent physician and surgeon would, under all of the circumstances, have dictated. Not only that, but the opinion of these physicians and surgeons was in substance that the defendant would have been pursuing the correct course in not operating on the injured parts, even had he been of the opinion that the extensor tendons were severed, in view of the serious injury to the carpal bones of the wrist and the fact that there had been no breaking of the outer flesh and skin. Such were the conflicting views of the learned doctors testifying in this case touching this manifestly intricate and delicate question of surgical science. To allow a jury or court to award damages against a physician for failure to perform such a delicate and risky surgical operation, when learned men of the profession have conflicting views touching the advisability of performing such an operation as appeared by the evidence in this case, would be, indeed, to allow the awarding of damages to rest on mere speculation and conjecture. The court has not noticed the testimony of these learned doctors at such length as it has for the purpose of determining which entertained the correct and which the erroneous opinion touching the defendant's treatment of the plaintiff's hand and wrist; but their testimony has been noticed by the court with a view of demonstrating that neither the defendant nor any other physician could, in the light of the plaintiff's injury and in the light of medical and surgical science, as the evidence in this case showed, have determined with any degree of certainty whether the treatment he pursued or the surgical operation which it was claimed he should have performed would have produced the better results. Had he operated, as it was claimed he should have done, and the result been no better than the treatment he gave, or worse, as the testimony of a majority of these learned doctors seemed to indicate, there would have been just as good ground for the plaintiff to rest a claim of damages on against him as that on which the plaintiff's present claim of damages was rested. This court has recognized the law to be that a physician is not an insurer of a cure in cases of affliction under his care for treatment, and that he is not to be held liable as for negligence or malpractice for the mere failure to cure, or for bad results because of his choosing one of two or more methods of treatment, when such choosing is an exercise of honest judgment on his part, and the method so chosen is one recognized by the medical profession as a proper method in the particular case, though it might not meet the unanimous approval of the medical profession.

Invalid Provisions for Revocation of Certificate

(Jewell vs. McCann et al. (Ohio), 116 N. E. R. 42)

The Supreme Court of Ohio reverses judgments of the court of common pleas and of the court of appeals that sustained a demurrer to the plaintiff's petition to enjoin the state medical board and its secretary from holding any hearing on, or making any finding or order with reference to, an application in the office of the board for the revocation of the plaintiff's certificate which authorized him to practice medicine and surgery. The court says that by the demurrer the question was presented whether the statutes which authorized proceedings to revoke the certificate, being Sections 1275 and 1276 of the General Code, were violative of the due process of law provisions of the state and federal constitutions. At the time of the commencement of this action, Dec. 18, 1914, those sections provided:

"Sec. 1275. The state medical board may refuse to grant a certificate to a person guilty of fraud in passing the examination, or at any time guilty of felony or gross immorality, or addicted to the liquor or drug habit to such a degree as to render him unfit to practice medicine or surgery. Upon notice and hearing, the board, by a vote of not less than five members, may revoke a certificate for like cause or causes.

"Sec. 1276. An appeal may be taken from the action of the state medical board refusing to grant, revoking or suspending a certificate, for the causes named in the preceding section, to the governor and attorney general, whose decision affirming or overruling the action of the state board shall be final."

Thereafter these sections were amended and supplemented; but, by reason of the provisions of Section 26 of the General Code, the statute as amended and supplemented subsequent to the institution of this proceeding could in no wise affect this case. The only authority possessed by the state medical board in the matter under consideration, at the time it attempted to take the action sought to be enjoined in this proceeding, was conferred by the sections above quoted. No provision whatever was made or then existed whereby the attendance of witnesses could be required or their testimony procured, nor was any procedure provided whereby the rights of the holder of such a certificate to engage in the practice of medicine could be protected and safeguarded. Although the statutes authorized the revocation of such certificate "upon notice and hearing," the board was not vested with any of the powers essential to the conduct of the trial or hearing. No process was authorized and no method or means for such hearing prescribed or provided, nor was an opportunity to be heard furnished by the provisions of Section 1276 authorizing an appeal to an officer or officers in whom was vested no authority to subpena witnesses, enforce attendance, compel the giving of testimony, or the production of necessary books, records and documentary evidence. The statutes in question did not provide the plaintiff due process of law, and are therefore invalid. The demurrer to his petition should have been overruled.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, Minneapolis, Dec. 27-29.
American Physiological Society, Minneapolis, Dec. 27-29.
Porto Rico Medical Association, San Juan, Dec. 22-23.
Society of American Bacteriologists, Washington, D. C., Dec. 27-29.
Southern Minnesota Medical Association, Mankato, Nov. 26-27.
Western Surgical Association, Omaha, Dec. 14-15.

DELAWARE STATE MEDICAL SOCIETY

One Hundred and Twenty-Eighth Annual Meeting, held at Middletown, Oct. 8-9, 1917

The President, DR. JAMES BEEBE, in the Chair

A Plea for Medical Supervision of Schools for Delaware

DR. JAMES BEEBE, Lewes: As a member of a local draft board I found that the percentage of physically deficient young adults was apalling. The most impressive fact in this connection was that most of these defects could have been corrected by proper treatment early in life. I have observed that, as a rule, the family physician rarely pays attention to the children of a family other than those suffering from an acute illness. The only logical way to reach these cases is by medical inspection of children in the schools. Such inspection also leads to the early discovery of contagious diseases and provides for proper sanitary measures.

Traumatic Rupture of Spleen; Pancreatic Cyst; Bullet Wound of Bowel

DR. JOHN PALMER, Wilmington: A boy, aged 19 years, fell from a cherry tree. He had almost no external evidence of injury but was unconscious. The next day he suddenly showed symptoms of shock as from internal bleeding. On operation the spleen was found ruptured and still bleeding. The region was packed for six days and the patient made an uneventful recovery. A pancreatic cyst in a man, aged 30, was drained of about 5 quarts of fluid and packed, and within five weeks recovery was complete. A boy, aged 15 years, had a pistol shot wound of the abdomen. By roentgenoscopy the bullet was located in the posterior part of the pelvis. At operation, a hole was found in one side of the lower part of the ileum. This was sutured, and recovery was complete. A later roentgenogram did not show a bullet. The presumption is that it had lodged in the intestine and later passed out by the bowel.

DISCUSSION

DR. WILLIAM J. MARSHALL, Milford: Dr. Palmer's cases have been unusual. Up to 1890, no operations for ruptured spleen had been performed, and the mortality rate at that time was 84.6 per cent. The operation of choice is supposed to be a partial or total splenectomy. But in operating we are not after mechanically successful operation but results.

Pneumonia

DR. JOSEPH W. BASTIAN, Wilmington: Pneumonia is a self-limited disease for which we have no specific. The most promising treatment is with serum which, however, is still in the experimental stage. If any local application has any effect it is the ice bag. These patients should be fed more liberally than was formerly done. Serum should not be used unless we first determine the variety of pneumococcus that causes the disease. Digitalis and strychnin are useful.

DISCUSSION

DR. H. W. BRIGGS, Wilmington: All pneumonia patients do better in fresh air, but the temperature of the air should be such as not to create discomfort.

DR. I. J. MACCOLLUM, Dover: I believe in the use of counterirritation over the chest both in bronchopneumonia and in lobar pneumonia. I do not favor the ice cap in pneumonia. The only time an ice cap is permissible in pneumonia would be in the first twenty-four hours, as it is in all inflammatory local conditions in which one is attempting to prevent more congestion, and it does help in the progress of the disease. After that time it leads to stasis and is a hindrance rather than a help.

DR. ROBERT B. HOPKINS, Milton: We still are undecided as far as specific treatment is concerned, yet my treatment has consisted of elimination. I do not object to giving half an ounce of compound jalap powder. By that we drain the system. I believe we relieve the congestion to a certain extent, and, while pneumonia is a specific disease, I believe that pneumonia is also a mechanical disease. If we can relieve the portal circulation, we place the men in a better position for recovery. I have used largely ammonium chlorid combined with syrup of ipecac. I did not lose a pneumonia patient last winter.

DR. J. W. BASTIAN, Wilmington: It has been conceded that patients do better with abundance of fresh air, comparatively cold; that is, hearty, robust patients. Unless there are some contraindications we put the patients on the porch with hoods on and their hands well protected by mittens. After being on the porch for a few hours, the majority request to be left there. The ice cap is, as a rule, kept on only for the first twenty-four hours. I am unable to see wherein the large doses of purgatives would have any particular advantage. If a man has had personal experience with large doses of purgatives, he realizes their effect. I think high rectal irrigations are better.

Leukemia

DR. JOHN W. JAMES, Dover: I would urge the importance of blood examinations in cases of anemia. If this were done we should much less often fail in diagnosis. The three agents most commonly used in the treatment of leukemia are the roentgen ray, benzene (benzol, C_6H_6) and radium. The roentgen ray has probably given the best results, but the results of radium treatment have likewise been wonderful. Nothing, however, has been found to be curative. Good results cannot be obtained unless the patient will keep under constant treatment.

DISCUSSION

DR. JOSEPH P. WALES, Wilmington: Year before last I had a very interesting case of leukemia. The patient has been practically well for a year and a half. The spleen was down in the pelvis. She had an uncommon symptom, that is, a very large pleural effusion on the left side. I had to aspirate eight times. The treatment was by the use of roentgen ray. Her spleen is now normal. She weighs 200 pounds, and is the picture of health.

Recognition and Treatment of Some Common Injuries and Diseases of the Eye

DR. W. O. LA MOTTE, Wilmington: In all eye conditions, the eye should be examined carefully. The treatment first adopted largely determines the outcome. Foreign bodies under the lids should be looked for. In looking for a foreign body on the cornea, rays from daylight or artificial light should be concentrated on it by means of a 3 inch lens, and if a foreign body is found, it should not be removed with a toothpick, and a cotton applicator should not be rubbed over the cornea. The foreign body should be removed with a sterile spud. Lime is a common cause of burns, and all foreign particles should be removed, which is best done by forcible irrigation of the conjunctival sac with clean water. Subsequently olive oil or sterile petrolatum should be instilled, and if the cornea is much inflamed, atropin should be used to prevent iritis. In all suspicions of entrance of a foreign body, as a piece of steel, a roentgenogram should be made. By Sweet's method its exact location can be found. Syphilis is the most common cause of iritis. Tuberculosis is second. Traumatism may be the exciting cause. Rheumatism is a doubtful cause. It may be caused by disturbance in metabolism or by absorption of toxins from the gastro-intestinal tract. Many cases of so-called rheumatic iritis are gonorrheal. Iritis should not be treated for conjunctivitis, as is often done, for it may mean the loss of an eye. Glaucoma is a disease that should always be kept in mind, because of the importance, among other things, of not using

atropin in such an eye. Strabismus should be treated early by proper glasses, muscle exercises, etc. Eighty per cent. of these patients can be cured without operation if proper treatment is instituted early enough and carried out. Functional headaches are due to eyestrain in 75 per cent. of the cases. In gonorrheal ophthalmia, the conjunctival sac should be irrigated from every half to one hour day and night. Once a day after the eye has been cleansed, the conjunctiva should be treated by being brushed over with a 2 per cent. solution of silver nitrate, and then the excess of the drug washed away with physiologic sodium chlorid solution. Then the lids should be greased with petrolatum.

Fraternity and Cooperation

Dr. Peter W. Tomlinson, Wilmington: Envy, jealousy and ungenerous rivalry too frequently scandalize our ranks. Our love and loyalty to our great and honorable profession require us to accord to every accredited confrère a square deal and a fair field, and even compel us to spread a magnanimous mantle of courtesy and charity over minor deficiencies and unpleasant peculiarities. We must regard our brother's art and accomplishments in the spirit of family pride. We must count his discovery or invention as a victory for the profession. His honor is ours. Our gains and losses are both mutual and individual. His personal achievement is a professional asset. A profession is a fraternity. Ours is the most confidential and sacred profession in the secular world, dealing as it does with the most sacred and secret interests and relations of individuals and families, and frequently determining the question of life and death. The very heart of fraternity is cooperation. How often we forget this and outstretch all other professions in ungenerous competition and relentless rivalries. Competition means selfish isolation. Cooperation means friendly associations.

INTERSTATE ASSOCIATION OF ANESTHETISTS

Meeting held at Toledo, Ohio, Oct. 9-11, 1917

(*Concluded from page 1647*)

Ether and Etherization in Relation to Infection and Immunity

Dr. William D. Haines, Cincinnati: For the past two and a half years we have used ether intraperitoneally in all operative cases in which peritonitis was present. In forty-three recent cases the mortality was 9.13 per cent. In the total of sixty-six cases there occurred seven deaths, or a mortality of 10.4 per cent. for the entire series, which included gastrointestinal perforations, gunfire and stab wounds, abortions, leaking pus tubes, and tuberculous peritonitis. In a number of the more virulent cases, ether was introduced through the drainage tube several times during the first and second days after operation. Postoperative complications, including shock, prolonged anesthesia, vomiting, dilatation of the stomach or heart, septic thrombophlebitis and gaseous distention of the intestine were not more frequent, severe or prolonged than in similar cases in which operation was performed prior to the adoption of ether in the treatment of peritonitis. Encouraged by our results, we have gradually enlarged the field of application to other infected regions of the body. Personal experience gained by reopening the abdomen for ileus and other postoperative conditions has led me to conclude that the formation of adhesions is dependent on some inherent condition in the patient's constitution rather than on the type of infection or the use of ether intraperitoneally. I have observed no instances of immediate or remote toxicity, sloughing or increased drainage due to the use of ether. Changes in dressings have been less frequent, toxemia has been more rapidly controlled, and recovery has been hastened by the use of ether, in quantities regulated by the age and condition of the patients.

Perfected Open Etherization and Its Utility in Routine Surgical Procedures

Dr. Isabella C. Herb, Chicago: Etherization has become popular and prevalent as a safety-first precaution against chloroform fatalities. Open etherization has superseded other methods of administration because of its simplicity, efficiency, safety and freedom from untoward complications. My experience has convinced me that the method has a wider scope of utility in routine surgical procedures than any other technic of narcosis. Dissatisfaction with the method is invariably due to faulty technic. Induction may be facilitated by means of nitrous oxid-oxygen, ethyl chlorid or ethyl bromid, but these adjuncts are not necessary for a pleasant induction if etherization is not pushed. This method is not fool-proof. When ether alone is administered properly, the induction of narcosis by the open method is comparatively comfortable; the blood is well oxygenated throughout narcosis, and the patient leaves the operating table with normal respiration and normal color. Barring operations requiring insufflation anesthesia, the open method is suitable for any patient or operative procedure in which ether is the anesthetic of choice. Experimental evidence shows that with the open method of etherization there is less injury to the lung epithelium than when closed or semiclosed methods are employed. The conservation of body heat during narcosis is of greater importance than the warming of the ether vapor.

Vapor Anesthesia, with Special Reference to Ether-Oxygen

Dr. John J. Buettner, Syracuse, N. Y.: While vapor or insufflation anesthesia has its broadest scope in nose, throat and mouth operations, it is serviceable for many other procedures, and is advantageous in certain types of hazardous risks. The tendency from the start has been to stabilize vaporization by heating, and to promote increased safety by the use of oxygen as a vehicle. Asphyxia may be produced by a lack of oxygen as well as by an excess of carbon dioxid. For simplicity and convenience I now use an oxygen autogenor to which is attached a three-bottle anesthetic device capable of providing a washed, moist ether, chloroform or combined vapor with oxygen, through nasal tubes or mouth hook.

Low Pressure Nasal Administration of Nitrous Oxid-Oxygen

Dr. M. Ecker, New York: For those who of necessity do many oral operations under a personally conducted anesthesia or analgesia, an apparatus that gives a perfectly controlled and visibly gaged flow of gases, and a nosepiece that delivers what the apparatus feeds without demanding the attention of the operator's hands are essential requisites for successful analgesia and anesthesia with nitrous oxid-oxygen under low pressures. By using low pressures, which supply sufficient amounts of the anesthetic to meet the respiratory demands of nose and mouth breathers, without loss by forcing, a decided element of economy is introduced in this somewhat expensive form of anesthesia. Just sufficient flow and pressure to meet the patient's respiratory capacity will obviate loss by respiratory wastage or air admixture, while forcing will promote such loss. The rebreathing bag attached directly to the nasal inhaler facilitates free respiration under normal pressure, secures the desirable carbon dioxid content, serves as a guide to the depth and frequency of respiration, and promotes the economical use of the anesthetic gases.

Local Anesthesia for Certain Operations

Dr. Leigh F. Watson, Chicago: When the field of operation cannot be absolutely blocked or obtunded, local anesthesia is contraindicated and should not be attempted unless all painful periods of the procedure are offset by general anesthesia. Such combined narcosis is invaluable under questionable circumstances. As the technic of infiltration and nerve blocking is perfected, local and conductive anesthesia are being utilized for many major operations previously contraindicated.

Nitrous Oxid-Oxygen Analgesia and Anesthesia in Obstetrics

Drs. C. E. Turner and W. I. Jones, Columbus, Ohio: Nitrous oxid is the ideal agent for the relief of labor pains. It is inhaled as readily as air, is practically odorless, almost

instantaneous in its analgesic action, and is eliminated before the next uterine contraction occurs. By varying its dosage, one may so accurately control the administration of nitrous oxid as to offset the increased or decreased distress of each individual pain. Its flexibility and rapidity of elimination make nitrous oxid analgesia preferable to hypodermic amnesia (twilight sleep) and chloroform à la reine. Nitrous oxid-oxygen has practically no contraindications in labor.

Anesthesia in the Surgery of Epileptics and the Control of Status Epilepticus

DR. G. KIRBY COLLIER, Sonyea, N. Y.: In operating on these epileptics we have in the majority of instances used open etherization by the drop method and have found it efficient, pleasant and safe. We have not noted even minor seizures during the induction period of narcosis, except in a few cases, and in these the attack could scarcely be termed a petit mal. Our results are in rather striking contrast to those of other observers who initiate induction with nitrous oxid and then switch to etherization. Nor have we noted seizures during the operative period, irrespective of the location of the operative field. In the mentally weak or dull we have sometimes found it tedious to secure cooperation, but the reaction to the anesthetic has always been the same. If difficulty arises it is most probably due to misunderstanding or dulness, and not to any physiopathologic distinction. For some time we have also been using chloroform in the control of the convulsions of status epilepticus, in association with other procedures and remedies. Chloroform is given to control the initial convulsions as immediately as possible. We have found this an efficacious routine and comparatively free from danger, although in one instance the use of chloroform probably played a part in the production of a delayed toxemic poisoning, or precipitated an acute exacerbation of an already existing acidosis. This is the only untoward experience we have had. The utility and value of chlorform in status epilepticus is in direct ratio to the opportunity of administering it as early as possible in the attack. Thus administered, in conjunction with high colonic flushing, and sedatives, it is frequently a life-saving measure.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

October, XLIV, No. 3

1 Integumentary Photosensitivity in Marine Fish, Epinephelus Striatus Bloch. H. Jordan.—p. 259.
2 Movements of Excised Ureter of Dog. G. B. Roth, Washington, D. C.—p. 275.
3 *Effect of Ether Anesthesia, Emotions and Stimulation of Splanchnics on Catalase Content of Blood. W. E. Burge, Chicago. —p. 290.
4 *Factors Influencing Interchange of Fluid Between Blood and Tissue Spaces. Blood Pressure. F. H. Scott, Minneapolis. —p. 298.
5 *Id. Muscular Activity. F. H. Scott, E. T. Herrmann and A. M. Snell, Minneapolis.—p. 313.
6 *Presence of Albumoses in Tissues and in Blood, with Special Reference to Their Occurrence in Gastro-Intestinal Mucosa. J. J. Abel, M. C. Pincoffs and C. A. Rouiller, Baltimore.—p. 320.
7 *Effect of Temperature on Rhythm of Excised Segments from Different Parts of Intestine. F. B. Taylor and W. C. Alvarez, San Francisco.—p. 344.
8 Mechanism for Vasodilatation from Epinephrin. F. A. Hartman and L. M. Fraser, Toronto, Canada.—p. 353.
9 *Physiology of Respiration. Changes Taking Place in Composition of Alveolar Air During Inspiration and Expiration. R. G. Pearce, Cleveland.—p. 369.
10 *Id. Oxygen and Carbon Dioxid Dead Space in Man. R. G. Pearce and D. H. Hoover, Cleveland.—p. 391.
11 Responses of Catfish, Amiurus Nebulosus, to Metallic and Non-metallic Rods. G. H. Parker and A. P. Van Heusen, Boston. —p. 405.
12 Heat Liberated by Beating Heart. C. D. Snyder, Baltimore. —p. 421.

3. Effect of Ether Anesthesia on Catalase Content of Blood.—Burge found that the catalase content of the blood decreases during the administration of ether and increases during the recovery from ether. The decrease is due to the destruction of catalase by ether, the increase to an increased output of catalase from the liver. The decrease in catalase during the administration of ether may be the cause of the decreased oxidation during anesthesia, while the increased output of catalase from the liver during recovery may account for the increased oxidation during this period. Blood catalase is destroyed in vitro by exposure to ether vapor, as happens in vivo during the administration of ether; however, in the former case catalase is not restored to the normal amount when the ether is removed by bubbling air or oxygen through the blood, as occurs in vivo when the animal is permitted to recover from the effect of ether by breathing air. The catalase content of the blood can be increased by prolonging the excitement stage of ether anesthesia or by stimulating electrically the splanchnic nerves distributed to the liver. The increase in catalase may account for the increased oxidation during the excitement stage of ether anesthesia, just as the decrease in catalase may account for the decreased oxidation during the rest of the stages.

4. **Factors Influencing Interchange of Fluid in Blood.**—According to Scott the hemoglobin content of the blood is rapidly modified by any alteration in blood pressure, a rise of pressure leading to an increase of hemoglobin and a fall to a decrease. These results can only be explained by the increased pressure forcing fluid out of the blood to the tissue spaces and the passage of fluid back from the tissue spaces to the blood when the pressure is lowered.

5. **Id.**—The authors state that there is an increase in the water content of muscle as a result of contraction if the blood is circulating through it. There is an increase in the hemoglobin content and in the blood count as a result of muscular contraction. This is due to the passage of fluid from the blood to the muscles. In some experiments the alterations found for the hemoglobin and for the blood count are not exactly the same. The authors believe this is due to technical errors and has no physiologic significance.

6. **Albumoses in Tissues and in Blood.**—Albumoses can be isolated in varying amounts from the tissues of the body, inclusive of the cellular elements of the blood. The methods employed did not, however, enable the authors to separate a proteose of any kind from the plasma of the blood. To prepare an albumose from the gastric or intestinal mucosa which is entirely devoid of pharmacologic activity (pressor, oxytocic and secretory) requires the employment of numerous chemical procedures, as outlined in this paper. The gastro-intestinal mucosa can be washed free of soluble adherent substances, such as the proteoses. The authors feel justified in assuming that what cannot be washed away must be truly a part of the mucosa. The gastro-intestinal mucosa contains from three to five times as much albumose during digestion of meat as after deprivation of all food (except water) for four days. In view of this finding the authors cannot accept the theory that proteins are taken up by the absorbing surfaces of the digestive apparatus only in the form of amino-acids, but must believe, rather, that proteoses as well as amino-acids are freely absorbed, as has long been maintained for the former by certain investigators. While they are able to trace the further passage of amino-acids from the mucosa to various organs via the blood current, they find it impossible at present to do this with proteoses. These cannot be traced further than into the absorbing mucosa, unless it should be assumed that the cellular elements of the blood are distributing agents for them—a point of view which they are at this moment not justified in advancing. The details of the fate of the absorbed proteoses still remain to be determined.

7. **Effect of Temperature on Rhythm of Excised Intestine.**—The evidence presented by Taylor and Alvarez indicates that the rate of rhythmic contraction is determined by the chemical changes taking place in the muscle. The difference in the coefficient for the four different segments implies a difference in their metabolism.

9. **Physiology of Respiration.**—The blood in the pulmonary capillaries contains less carbon dioxid during inspiration than during expiration. The alveolar air receives a greater amount

of carbon dioxid during inspiration than during expiration. The greater amount of the carbon dioxid given off during the respiration cycle occurs at a pressure less than the mean; the less amount is given off at a pressure above mean. The alveolar carbon dioxid tension rises relatively more rapidly during the termination of inspiration and during the first part of expiration than during the latter part of expiration. This condition is due to the fact that during the first part of expiration the pressure of carbon dioxid is less than in the latter part, inasmuch as the total volume of air is reduced by the expiratory act, and each added increment of carbon dioxid is added to progressively decreasing amounts of air, and accordingly the percentage of carbon dioxid mounts very rapidly; even though the actual evolution of carbon dioxid from the blood is less at high partial pressures of carbon dioxid than at low pressures. The rate of oxygen intake of the blood is practically constant during both phases of the respiration at ordinary barometric pressures. A method based on theoretical grounds is proposed by Pearce for the determination of the gaseous composition of the alveolar air and for the capacity of the dead space for both oxygen and carbon dioxid. He believes that the results obtained by this method give very accurate values for mean tensions of carbon dioxid and oxygen in the alveolar air. Samples obtained by the Haldane-Priestley method give figures 6 to 15 per cent. higher for carbon dioxid, and 9 to 20 per cent. higher for oxygen absorbed than are obtained by this method. The dead space determined by this method fails to show as great variation as when determined by the Haldane-Priestley method, and the dead spaces for oxygen and carbon dioxid are of the same magnitude within the experimental error.

10. **Oxygen and Carbon Dioxid Dead Space in Man.**—The experiments outlined by Pearce and Hoover, together with the correct calculations of the data of Haldane, show that deep breathing, which is controlled by needs of the body, does not alter the dead space or "virtual dead space" of Henderson. When the respirations are controlled by the respiratory center and not of extreme depth: (*a*) The dead space is relatively fixed anatomic and physiologic entity. (*b*) The dead space for carbon dioxid and that for oxygen are essentially the same under all conditions. The variations which Haldane, Henderson and their associates find in the capacity of the dead space on deep breathing, and the lack of agreement between carbon dioxid and oxygen dead spaces, are attributable to faulty methods and artificial modes of breathing. The Haldane-Priestley method for the determination of the dead space for oxygen or for carbon dioxid is inaccurate. As great variations in the dead spaces as those found by Haldane and Henderson can be obtained by other methods of altering the respiration than by increasing the depth of breathing. The determination of the percentage of oxygen in the alveolar air by the Haldane-Priestley method is subject to greater error than that for carbon dioxid and any figures obtained by it for oxygen tension in the alveolar air during exercise or at reduced barometric pressures are untrustworthy.

American Journal of Roentgenology, New York

October, IV, No. 10

13 Diagnostic Points in Suppurative Diseases of Ribs and Sternum. E. G. Beck, Chicago.—p. 491.
14 *Bone Changes in Leprosy. J. A. Honeij, New Haven, Conn. —p. 494.
15 Greater Certainty in Localization of Foreign Bodies in Eye. J. G. Van Zwaluwenburg, Ann Arbor, Mich.—p. 512.
16 Surgery of Roentgen Ray Lesions. L. L. McArthur, Chicago. —p. 521.
17 Abdominal Tuberculosis. P. Eisen, Chicago.—p. 525.
18 Dental Pathology; Its Importance as Avenue of Infection. F. D. Leach, Chicago.—p. 526.
19 Renal Calculus of Unusual Size. E. H. Kessler, St. Louis.—p. 529.
20 "Quiet" Pott's Disease. W. A. Evans, Detroit.—p. 530.

14. **Bone Changes in Leprosy.**—The bone changes in leprosy observed by Honeij vary from slight thinning, atrophy or periostitis to advanced changes with total absorption of phalanges, marked inflammatory action in bone, distortion, ankylosis and fractures. Changes may begin in the periosteum, articular surfaces, corticalis or medullary canal, and apparently any of these changes or all of them may occur in the same set of bones. Also the bones of the hands and feet show the changes soonest and to the greatest extent. The tibia was in one case markedly affected, but in a number of cases the ankle joint bones were not affected. A curious exception in the hands was the thumb, the bones here being in but a few cases slightly affected. The changes in the nerve type are atrophic and in the nodular type inflammatory or hypertrophic. In these particular cases the reverse has occurred and both types of changes have appeared in each form. Periostitis is common. In the absorption process the epiphysis suffers first and most. Cyst or cavity formation is greatest in the diaphysis. Ankylosis occurs, but not healing of fractures, in which salt deposit is necessary. Ulceration of the skin is not necessary, as marked periostitis occurs without any discoverable lesion in the tissues outside the bone. Definite atrophic bone changes, without apparent change in the contour of the phalanx and periosteum, do occur. Atrophic bone changes occur in cases of nodular leprosy; demonstrating the fact that definite nerve disturbances are as much a part of nodular leprosy as inflammatory bone absorption is a part of the process in nerve leprosy. Not in a single case can it be definitely said that the destructive bone process arises internally or externally, for in a single case a periostitis may exist in one phalanx, while in another phalanx the changes are wholly medullary.

Annals of Surgery, Philadelphia

October, LXVI, No. 4

21 Handling of Early and Doubtful Cases of Cancer. R. B. Greenough, Boston.—p. 385.
22 *Technic for Radical Cautery Operation in Breast Cancer. J. F. Percy, Galesburg, Ill.—p. 397.
23 Regional Anesthesia in Extrapleural Thoracoplasty and Some Intrathoracic Operations. W. Meyer, New York.—p. 404.
24 *Advantage of Cholecystectomy in Avoidance of Adhesions in Gallbladder Surgery. A. M. Willis, Richmond, Va.—p. 411.
25 *Posture in Cases of Abdominal Drainage. R. Hill, St. Louis. —p. 414.
26 *Operative Treatment of Hour-Glass Stomach; Report of Case Treated by Double Posterior Gastro-Enterostomy. R. C. Webb, New York.—p. 418.
27 *Extent of Tissue to Be Excised for Radical Removal of Carcinoma of Stomach. W. Thalhimer and A. O. Wilensky, New York. —p. 421.
28 *Hyperplastic Pyloric Stenosis. D. W. Palmer, Cincinnati.—p. 428.
29 Giant Duodenum; Report of Case in Child. W. A. Downes, New York.—p. 436.
30 Case of Megacolon: Megasigmoid, Hirschsprung's Disease. W. R. Jackson, Mobile, Ala.—p. 441.
31 Safe Elimination of Colon for Relief of Uncontrollable Intestinal Stasis. A. J. Ochsner, Chicago.—p. 443.
32 Idiopathic Choledochus Cyst; Report of Case Cured by Choledochoduodenostomy. E. Waller, Lidkoping, Sweden.—p. 446.
33 Relative Indications for Cholecystectomy and Cholecystotomy. F. R. Benham, Syracuse, N. Y.—p. 464.
34 Torsion and Inflammation of Appendices Epiploicae; Report of Case and Review of Literature. A. H. Harrigan, New York. —p. 467.
35 *Ultimate Results Following Nephropexy in Cases of Symptomatic Nephroptosis. J. G. Clark and F. B. Block, Philadelphia.—p. 479.
36 Congenital Elevation of Scapula (Sprengel's Deformity). J. F. Binnie, Kansas City, Mo.—p. 488.
37 *New Method of Excising Head of Humerus. T. T. Thomas, Philadelphia.—p. 492.
38 Fungous Diseases of Foot, or Madura Foot, in America; Report of Case. R. Winslow, Baltimore.—p. 496.

22. Abstracted in The Journal, Jan. 13, 1917, p. 146.

24. **Cholecystectomy to Avoid Adhesions in Gallbladder Surgery.**—In a well performed cholecystectomy where no bile is split in the cavity and no drain of the liver is used, Willis says, the trauma of operation seems to be an insignificant factor in stirring up adhesions. On the other hand, in cholecystostomy and cholecystectomy where a drain is used and there occurs spilling of bile, adhesions invariably follow. From the results of his experiments Willis feels that bile is an important factor in the production of adhesions, and that it is of the utmost importance that the irritating and often infected bile should not be allowed to come in contact with peritoneum.

25. Absracted in The Journal, Jan. 13, 1917, p. 145.

26. **Operative Treatment of Hour-Glass Stomach.**—In view of the fact that gastroplasty is often unsuccessful in wide-

spreading ulcer and gastrogastrostomy is relatively dangerous in the presence of much tension, Webb is of the opinion that double posterior gastro-enterostomy is a logical operation and is definitely indicated in certain cases. He cited one successful case.

27. **Radical Removal of Carcinoma of Stomach.**—According to Thalhimer and Wilensky, in small carcinomas of the stomach, situated elsewhere than at the pylorus, the malignant process is so limited in extent that local resection at a distance of from one to two centimeters beyond the macroscopic limits of the tumor will, in the majority of instances, remove the entire tumor. Even in some of the comparatively large tumors included in the authors' study there was no extension of the tumor detectable by the microscope beyond this limit. When a malignant tumor is situated at the cardiac end of the stomach, the surgeon may either perform a complete gastrectomy or consider these cases inoperable. The serious consideration of complete gastrectomy is almost forbidden in these cases because of the high mortality of this operation. Local excision of the tumor is a far less dangerous procedure, and, since the authors' investigations have shown that such local excision is sufficient for the removal of the malignant process, these tumors become accessible for radical operative treatment. Of course such excision is only radical provided no metastases are present.

28. **Hyperplastic Pyloric Stenosis.**—Palmer reports on thirteen cases of congenital pyloric obstruction. In three of these further observation was advised; one patient died suddenly while waiting for the mother's permission to operate, and of the remaining nine, on three gastrojejunostomy was made, and on six the Rammstadt operation. Eight of the nine patients operated on had a marked tumor formation at the pylorus that could not but produce a decided obstruction to the passage of food. The average age of the eight living operated patients when last heard from was 7⅝ months, and the average weight was 17⅝ pounds, or nearly 1 pound above the average given in Holt's book.

35. **Ultimate Results Following Nephropexy.**—While the results obtained by Clark and Block are said to be by no means perfect, they nevertheless present a 70 per cent. restoration to active efficiency of the women operated on, a degree of restoration which compares favorably with many other operations generally accepted by representative surgeons. The authors call attention to the fact that the kidney, particularly the right, is not a fixed organ, and even an excessive range of mobility is no certain index of a reflex gastric or nervous disability unless direct renal symptoms referable to the kidney itself are present. The three cardinal symptoms of disturbed renal function are pain in the renal area; a urinary or Dietl's crisis, due to kinking of the ureter; or vesical irritability directly referable to the kidney of the affected side. No diagnosis should rest solely on palpation of even an unduly movable kidney or on a definite symptomatology unless this is confirmed by a cystoscopic examination, catheterization of the ureters, and a pyelograph to define the point of kinking in the ureter and the degree of dilatation of the renal pelvis. With this rigid method of exclusion and clear symptomatic definition the surgeon may confidently count on securing 70 per cent. of cures and from 10 to 15 per cent. of improvements as the result of the operation. The dangers arising from the injection of roentgenographic substances into the renal pelvis are great if piston or excessive gravity pressure is employed during the injection. With slight gravity pressure no untoward symptom has been observed in their series of cases. In the hands of the authors the Edebohls method, with slight modification, has proved satisfactory as a permanent means of anchorage.

37. **Excising Head of Humerus.**—The operation described by Thomas was performed in one case of recurrent dislocation of the shoulder and in one of old unreduced dislocation. It does not disturb any of the muscles except the subscapularis, which is divided, but later is reunited. Only the cartilage covered portion of the humeral head is removed by sawing through at the anatomic neck. This prevents recurrences of the dislocation, because it removes the only portion which can be dislocated, while it does not disturb any of the muscle attachments except that of the subscapularis, which reunites closely later. In the old unreduced dislocation this operation removes the bony obstruction to the ascent of the remaining portion of the humerus to its normal level just below the acromion process.

Archives of Internal Medicine, Chicago

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39 *Study of Uric Acid in Gout. C. W. McClure and J. H. Pratt, Boston.—p. 481.
40 Ferment Antiferment Balance and Its Relation to Therapeusis. W. F. Petersen, Chicago.—p. 515.
41 Relation of Pellagra to Location of Domicile in Inman Mills, Inman, S. C. J. F. Siler, P. E. Garrison and W. J. MacNeal, New York.—p. 521.
42 *Absorption of Phenolsulphonephthalein from Subarachnoid Space in Diseases of Central Nervous System. H. G. Mehrtens and H. F. West, San Francisco.—p. 575.
43 *Study of Erythrocytes in Case of Severe Anemia with Elongated and Sickle-Shaped Red Blood Corpuscles. V. E. Emmel, Chicago.—p. 586.
44 *Cholesterol Content of Human Blood. F. D. Gorham, St. Louis, and V. C. Myers, New York.—p. 599.
45 Temperature Method in Localization of Cardiac Pacemaker. B. H. Schlomovitz, Chicago, and C. S. Chase, Iowa City, Iowa. —p. 613.
46 Pyopneumothorax and Pneumothorax; Report of Two Cases. J. A. Honeij, New Haven, Conn.—p. 629.
47 Asthma Complicating Serum Treatment of Pneumonia. H. L. Alexander, Boston.—p. 636.

39. **Uric Acid in Gout.**—The authors' studies on the intravenous injection of uric acid and the feeding of nuclein containing material, together with the compilations they have made from reports in the literature, show that in normal and nongouty as well as in gouty persons there is great variability in the quantity and in the duration of exogenous uric acid excretion. For this reason a diminished or a protracted exogenous uric acid output most probably results from factors other than disturbances in the nuclein intermediary metabolism. If this is not true, then derangements in nuclein metabolism are so common that their importance in the etiology of any diseased condition is problematic. In the majority of gouty persons the uric acid in the blood is more than 3 mg. per hundred c.c. when determined by the method of Folin and Denis. No relation exists between the amount of uric acid and of total nonprotein nitrogen found in the blood of gouty persons. A marked retention of nonprotein nitrogen is not frequent in gout. The excretion of exogenous uric acid by normal, by arthritic, and by gouty persons varies greatly both in amount and in duration. The retention of exogenous uric acid is regarded as a symptom of questionable importance in the diagnosis of gout.

42. **Phenolsulphonephthalein Absorption.**—Mehrtens and West summarize their paper as follows: Phenolsulphonephthalein when injected into the subarachnoid space in normal persons appears in the urine in ten minutes or less. Diseases of the central nervous system, especially when involving the meninges, produce a lengthening of the appearance time to as much as seventy minutes in some cases. This delay cannot be accounted for by disease of the kidneys, or by the reduction of the phenolsulphonephthalein in the spinal fluid. Advanced general arteriosclerosis may be a factor in causing the delay in some instances. In syphilis a lengthening of the appearance time may be produced before any other evidence of central nervous system involvement has appeared. The method may prove of value in detecting instances of organic central nervous system disease in which the ordinary spinal fluid findings are negative or incomplete. At this time no definite conclusion can be drawn as to the exact location of the absorbing tissues.

43. **Erythrocytes in Anemia.**—The patient, aged 21, entered the hospital with an ulcer on the leg. The ulcer healed under treatment and after her discharge from the hospital, Dec. 3, 1914, the patient gained in weight and showed general improvement. An ulcer had appeared on the leg at two previous times in her history, the first at the age of 5, and the second at the age of 19. In both instances, with treatment, it soon healed. The third appearance occurred ten months previous to the patient's entering the hospital. Aside from this ulceration the physical examination otherwise furnished

apparently little data of evident significance. Examinations for syphilis or parasites were negative. The blood picture constituted the most striking feature of the case and has been more or less persistent up to date, a period of over two and one-half years. About one third of the erythrocytes instead of presenting the normal disk form are greatly elongated in shape. A large percentage of the latter have a crescentic or sickle-shaped form. Nucleated erythrocytes occurred in all preparations. Some of the normoblasts present a biconcave disk shape. Punctate basophilia occurs in many of the nucleated red corpuscles, but was not observed in either the disk-shaped or sickle-shaped nonnucleated corpuscles. Jolly bodies or Cabot rings were not found. Phagocytosis of erythrocytes is taking place to a certain extent in the peripheral circulation. In culture preparations kept at room temperature it was found that great numbers of the previously disk-shaped corpuscles became transformed into elongated and crescentic elements. The tips of the latter were frequently extended into tapering hair-like processes. During one period of the study, for some unknown reason, the abnormal crescentic forms had temporarily disappeared from the circulation. In culture preparations, however, the erythrocytes still manifested the tendency to assume elongated and crescentic forms. Similar cultures from normal blood and from cases of pernicious anemia, chlorosis and myelogenous leukemia gave only negative results.

An interesting exception was obtained in the case of the patient's father. In this instance the circulatory erythrocytes presented an apparently normal structure, but under culture conditions occasional corpuscles were found to assume elongated and crescentic forms. In culture preparations made by placing erythrocytes from a case of pernicious anemia in the centrifuged serum of the patient's blood, some of the red corpuscles assumed characteristics comparable to those observed in cultures of the patient's blood. The culture reaction of the erythrocytes appears to be specific for this case of anemia, and the manner in which the red blood corpuscles are transformed into the sickle-shaped elements suggests that the phenomenon is in part at least due to an accentuated or abnormal activity of the same factors which in normal hematogenesis are involved in the transformation of the original spherical erythrocyte into a biconcave disk-shaped form.

44. **Cholesterol Content of Human Blood.**—Cholesterol estimations were made by Gorham and Myers in the blood of about 200 patients, suffering clinically from about twenty-five different diseases. Hypercholesterolemia was observed, though not invariably, in arteriosclerosis, nephritis, obstructive jaundice and diabetes. A hypocholesterolemia was found in the cachexia of malignancy and all anemias of the pernicious type. The low cholesterol values encountered in the blood plasma of patients with pernicious anemia are regarded as of considerable significance, especially in view of the strong antihemolytic action of cholesterol. The findings in cholelithiasis were quite inconstant. Since hypercholesterolemia may be found in many conditions and is not uniformly constant in cholelithiasis, it would seem that the blood cholesterol possessed only a limited diagnostic usefulness in this condition. It is suggested that the estimation may possess some diagnostic value in diabetes, since the cholesterol serves as an easily determined index of any lipemia.

Boston Medical and Surgical Journal

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48 Bearings of Industry on Medical Practice. D. L. Edsall, Boston.—p. 575.
49 Activities of Labor Department. E. Mulready, Rockland.—p. 576.
50 Adjustment of Physical Defectives to Employment. W. I. Clark, Worcester.—p. 578.
51 Establishment of First Aid Hospital in Industry. H. J. Cronin, Cambridge.—p. 580.
52 Changing Methods and Advances in Treatment of Progressive Deafness from Chronic Secretory Otitis Media. F. P. Emerson, Boston.—p. 583.
53 Etiology of Disturbances of Heart Beat. G. E. Barnes, Herkimer.—p. 588.
54 *Case of Brain Tumor Showing Extensive Destruction, with Few Diagnostic Symptoms. H. E. Thompson, Worcester.—p. 592.
55 Hemorrhage Following Tonsillectomy. H. H. Amsden, Concord, N. H.—p. 594.

54. **Brain Tumor Showing Extensive Destruction.**—Thompson reports a case of glioma of the brain in a man, 70 years of age, causing extensive destruction of the brain tissue. It involves the corpus callosum, white matter of the left frontal lobe, caudate and lenticular nuclei and internal capsule. The mental symptoms showed themselves by a tendency to wander about, increased irritableness and loss of memory. An early symptom was the loss of control of the sphincters. The history is one of occasional seizures, characterized by pallor, rigidity and confusion, followed by prolonged sleep. As the disease progressed, memory loss and confusion increased. Twenty days before his death the patient was able to walk with a normal gait, and the hand grips, although weak, were equal. Pupils reacted normally and tendon reflexes showed nothing unusual. The eye grounds were not examined. As his mental confusion progressed it became necessary to keep the patient in bed and feed him with a spoon, but no paralysis of either upper or lower extremities was noted; neither were any speech difficulties mentioned. Headache is nowhere mentioned in the case, either before or after admission to the hospital. The case seems interesting on account of the poverty of diagnostic features as compared with the extensive destruction of brain tissue.

Canadian Medical Association Journal, Toronto

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56 From Vague to Concrete in Science and Medicine. F. Harris, Halifax.—p. 865.
57 Sanitary Records of Houses. J. A. Baudouin. Montreal.—p. 879.
58 Care and Treatment of Mental Defectives. H. MacMurchy, Toronto.—p. 893.
59 Case of Hysteria in Male. C. Meyers, Toronto.—p. 896.
60 Cases of Carcinoma of Cervix Uteri. C. E. Holbrook, Montreal.—p. 906.
61 Deficiency Diseases of Infancy and Childhood. A. Brown, Toronto.—p. 911.

Colorado Medicine, Denver

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62 The Physician's Duty in Time of War. A. C. Magruder, Colorado Springs.—p. 260.
63 The Call to Duty. J. C. Gunter.—p. 267.
64 The French Military Medical Service. F. Trèves.—p. 270.
65 National Defense. J. A. B. Scherer, Washington, D. C.—p. 272.
66 Conjunctival Epithelioma at Limbus. W. H. Crisp, Denver.—p. 273.

Florida Medical Association Journal, Jacksonville

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67 Creeping Eruption. J. L. Kirby-Smith, Jacksonville.—p. 95.
68 Management of Increased Blood Pressure. J. V. Freeman, Jacksonville.—p. 100.
69 Treatment of Chronic Gonorrhea. H. A. Mills, Jacksonville.—p. 103.
70 Baths in Neurasthenia. J. Reeve, DeLand.—p. 105.
71 Tinnitus in Neurasthenia. F. J. Walter, Daytona.—p. 106.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

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72 Action of Certain Emetin Derivatives on Amebae. F. L. Pyman and C. M. Wenyon.—p. 237.
73 *Action of Alypin, Eucain, Holocain, Novocain and Stovain on Bladder. J. A. Waddell, Charlottesville, Va.—p. 243.
74 *Action of Epinephrin in Inhibiting Flow of Pancreatic Secretion. F. C. Mann and L. C. McLachlin, Rochester, Minn.—p. 251.
75 *Nondependence of Protein Quotient in Blood Serum on Rapidity of Metabolism with Especial Reference to Noneffect of Antipyretics, Sodium Cacodylate and Thyroid Extract. S. Hanson and I. McQuarrie, San Francisco.—p. 261.
76 Physiologic Action of Cordyceps Sinensis. J. F. Brewster and C. L. Alsberg, Washington, D. C.—p. 277.
77 *Fate of Strychnin in Body. R. A. Hatcher and C. Eggleston, New York.—p. 281.

73. **Action of Alypin, Eucain, Holocain, Novocain and Stovain on Bladder.**—Waddell found that alypin, alpha and beta-eucain, holocain, novocain and stovain stimulate the excised bladder when suspended in oxygenated Tyrode's solution at body temperature. Compared with cocain, the stimulating action of beta-eucain is approximately one-seventh; of novocain, one-sixth; of alypin, alpha eucain and stovain, one-third; and of holocain, two-thirds. Mixtures of the synthetic cocain substitutes with each other give simple summation on the excised bladder. Combinations with epinephrin exhibit simple antagonism and with pituitary extract simple summa-

tion on the excised bladder. Paralysis of the parasympathetic myoneural junctions by atropin does not alter the response of the excised bladder to any of the drugs of this series. The conclusion drawn is that these drugs act on the muscle directly, since their effects are the opposite to those of sympathetic stimulation and are unchanged by paralysis of the parasympathetic myoneural junctions.

74. **Epinephrin Inhibiting Flow of Pancreatic Secretion.**—Experiments conducted by Mann and McLachlin showed that large doses of epinephrin, which produce a marked rise of blood pressure, always decrease the flow of pancreatic secretion. Very small doses usually also decrease the activity of the pancreas regardless of whether a pressor or depressor action of blood pressure is produced. Epinephrin also decreases pancreatic volume at the same time it decreases pancreatic flow, regardless of its effect on the general blood pressure. While it is not stated definitely that epinephrin does not specifically inhibit the pancreatic cells, it would seem that the action of epinephrin in inhibiting the pancreatic secretion depends on the amount of blood passing through the gland. Large doses of epinephrin, even though general blood pressure is greatly increased, decrease the amount of blood to the pancreas by excessive local constriction, and thus decrease the flow of pancreatic juice. Small doses may or may not affect the secretion of the pancreas, depending on whether the relation of the local constriction and the changes in general blood pressure change the amount of blood going to the gland. The pancreatic vessels may constrict with a dose which will produce enough dilatation elsewhere to cause a decrease in general blood pressure, or which may not produce enough general action to affect blood pressure at all. In every case the cause is the same, a reduction of the amount of blood passing through the gland per unit of time. However, these results all tend to accentuate the fact that the pancreatic vessels seem to be more sensitive toward the pressor action of epinephrin than those of any other region concerning which data are available.

75. **Nondependence of Protein Quotient**—According to Hanson and McQuarrie, antipyrin, even in large doses, causes no change in the serum proteins. Substances most intimately related to antipyrin in their pharmacologic action (acetanilid and paramidophenol) have no effect on the protein quotient. Other substances influencing metabolism (*a*) in the direction of retardation (quinin and sodium cacodylate), or (*b*) in the direction of acceleration (thyroid extract), produce no change in the relative proportions of the serum proteins. These experimental results consistently indicate that the quantity of albumins and globulins in the blood serum is quite independent of the rapidity of the nitrogenous metabolism.

77. **Fate of Strychnin in Body.**—Experiments carried out by Hatcher and Eggleston on cats, dogs and guinea-pigs showed that toxic doses of strychnin may be administered at short intervals during periods up to twelve days, the total amounts so administered being equal to twenty-five times the single fatal dose, without causing perceptible lasting effects. Only a small percentage of the strychnin so administered can be recovered from the urine, and none from the feces. The excretion in the urine usually ceases within twenty-four to forty-eight hours. The tissues of the guinea-pig (exclusive of the skin, which was not examined) do not yield any strychnin even after the administration of very large amounts provided that death does not take place within three hours after the administration of the last dose. The facts just stated point conclusively to the rapid destruction of the strychnin in the body of the guinea-pig and almost as conclusively to that in the bodies of the cat and dog.

Perfusion of the liver of the dog and that of the guinea-pig with defibrinated blood or Locke's solution to which strychnin has been added results in the destruction of a large part of the strychnin, and the storage of a greater portion of the remainder than can be accounted for by the proportion of the perfused fluid held in the liver. The strychnin stored in the liver is loosely bound and the greater part of it may be removed by perfusing once with an amount of Locke's solution equal to several times the weight of the liver. Strychnin is not destroyed in all cases when it is added to defibrinated blood or hashed liver tissue and allowed to stand at body temperature for several hours, but there is some evidence that small amounts may be destroyed in this way under slight differences in conditions which Hatcher and Eggleston have not determined. Strychnin is destroyed slowly, or not at all, when it is added to the guinea-pig's intestine and its contents and the mixture is allowed to stand at body temperature for twenty-four hours. Strychnin is not excreted in the bile after its intravenous injection into the dog.

Journal-Lancet, Minneapolis

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78 Transverse Incision in Upper Abdomen. E. P. Quain, Bismarck, N. D.—p. 657.
79 Tuberculosis Problem in Minnesota. H. M. Bracken, Minneapolis. —p. 664.
80 Roentgenology in Medicine and Surgery. N. J. Nessa, Sioux Falls, S. D.—p. 671.
81 Some Commoner Diseases of Eye, Ear, Nose and Throat. J. D. Lewis, Minneapolis.—p. 674.
82 Use of Bacillus Lactis Bulgaricus in Treatment of Infected Wounds. W. A. Fansler, Minneapolis.—p. 679.

Laryngoscope, St. Louis

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83 New Method of Working Out Difficult Mechanical Problems of Bronchoscopic Foreign Body Extraction. C. Jackson, Philadelphia.—p. 725.
84 Tracheobronchial Diphtheria; Report of Cases. H. L. Lynah, New York.—p. 734.
85 Epithelioma of Middle Ear and Mastoid; Report of Case. F. A. Burton, San Diego, Calif.—p. 755.
86 Vincent's Angina; Report of Cases. F. Carroll, Cedar Rapids, Iowa.—p. 763.
87 Experience with Beck-Pierce Tonsillectome. H. Dupuy, New Orleans.—p. 769.

Medical Record, New York

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88 Relation of Spleen to Certain Obscure Clinical Phenomena. W. J. Mayo, Rochester, Minn.—p. 705.
89 Field of Neurologic Surgery. W. Sharpe, New York.—p. 711.
90 Lumbar Puncture in Seven Hundred Cases. Y. C. Lott, New York. —p. 717.
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92 Pernicious Anemia. J. F. Jenkins, Opelika, Ala.—p. 721.
93 New Surgical Treatment of Atrophic Rhinitis: Enlarging the Inferior Turbinate. E. A. Griffin, Brooklyn.—p. 723.

Medicine and Surgery, St. Louis

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94 Obscure Tarsal and Malleolus Fractures; Report of Cases. W. P. Coues, Boston.—p. 801.
95 Screw Fixation in Joint Fractures; Report of Cases. A. P. C. Ashhurst, Philadelphia.—p. 812.
96 Case of Melanocarcinoma Showing Its Stealthy Nature and Rapidly Malignant Course. P. G. Skillern, Jr., Philadelphia.—p. 822.
97 "Bipping" of Blacksmithing; Treatment of Fractures. D. H. Stewart, New York.—p. 828.
98 Syphilis of Joints. J. K. Young, Philadelphia.—p. 836.
99 Nitrous Oxid Oxygen Anesthesia. E. L. King, New Orleans. —p. 843.
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Modern Hospital, St. Louis

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103 Federal Inspection and Control of American Hospitals. R. J. Wilson, New York.—p. 233.
104 Hospitals and Workmen's Compensation. T. Howell and K. Buckley, New York.—p. 234.
105 Addison County Hospital, Middlebury, Vt. H. L. Walker, New York.—p. 240.
106 The Public Health Work of Children's Hospital. C. V. Dorwarth, Philadelphia.—p. 242.
107 Industrial Hospital Managed by Employees. H. B. Smith.—p. 244.
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109 Unique Attempt to Express Medical Service without Charity. R. Pollock, San Diego, Calif.—p. 251.
110 Standardization of Hospitals—Class IV, Small Semipublic Hospitals. J. A. Hornsby and others.—p. 253.
111 Reorganization of Civilian Hospital on War Basis. W. H. Smith. —p. 262.

New York Medical Journal

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112 War Tetanus. L. H. Cornwall, New York.—p. 773.
113 Bringing Up of Children and Nervous Diseases. A. Stern, New York.—p. 777.
114 Diabetes Mellitus. I. W. Held and M. H. Gross, New York.—p. 780.
115 Two Cases of Inflammatory Stricture of Right Ureter Due to Pelvic Abscess Following Ureterotomy of Left Ureter. W. H. McNeil, Jr., New York.—p. 786.
116 Circumcision. F. D. Austin, Charlotte, N. C., and T. G. Sharpe, Greenville, S. C.—p. 787.
117 Applicability of Desiccation Surgery to Eye Conditions. J. A. Kearney, New York.—p. 788.
118 Case of Puerperal Eclampsia. M. Cohen, Montclair, N. J.—p. 789.
119 Anilin Poisoning. V. C. Baker, New York.—p. 790.
120 Carrel's Method of Treatment of Infected Wounds. G. Loewy, New York.—p. 798.

Pennsylvania Medical Journal, Athens

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121 Present Status of Drugless Therapy in State of Pennsylvania. J. M. Baldy, Philadelphia.—p. 3.
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128 Practical Value of Immunologic Methods in Diagnosis. J. A. Kolmer, Philadelphia.—p. 37.
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Public Health Journal, Toronto

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130 Preventive Medicine. G. E. DeWitt, Wolfville, N. S.—p. 211.
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132 Diagnosis of Anterior Poliomyelitis. C. Miller, Stellarton, N. S.—p. 219.
133 Acute Anterior Poliomyelitis. M. D. Morrison, Dominion, N. S.—p. 223.
134 Venereal Disease Problem. W. H. Hattie, Halifax.—p. 228.

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135 Value of Statistics in Public Health Work. M. M. Seymour, Regina, Sask.—p. 245.
136 Medical Supervision of Schoolchildren. H. A. Payzant, Dartsmouth, N. S.—p. 251.
137 Some Medicosociologic Problems Arising Out of War. W. H. Hattie, Halifax, N. S.—p. 254.
138 Medical Aspects of Tobacco Habit. D. F. Harris, Halifax, N. S.—p. 259.
139 Conservation of Life. J. J. Cameron, Antigonish, N. S.—p. 263.
140 Sanitation of Factories. P. Ring, Halifax, N. S.—p. 266.

United States Naval Medical Bulletin, Washington, D. C.

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141 Tuberculosis and Military Organization. A. C. Klebs, Washington.—p. 439.
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146 Organization of Naval Medical Corps, Sixth Naval District. G. W. Calver.—p. 497.
147 Present Status of Cerebrospinal Fever with Special Reference to Diagnosis and Control. H. S. Cumming.—p. 504.
148 System in Handling Dental Patients Aboard Ship. R. Barber.—p. 515.
149 Barium Formaldehyd Method of Disinfection. R. P. Crandall.—p. 519.
150 Convenient Device for Testing Vision. W. S. Thomas.—p. 533.
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156 Multiple Gunshot Wounds Resulting from Deflected Bullets. W. A. Bloedorn.—p. 541.
157 Multilocular Cyst. W. L. Mann and F. L. Conklin.—p. 543.
158 Impermeable Dressings in Treatment of Burns. J. J. A. McMullen.—p. 544.
159 Method of Locating Bullets and other Foreign Bodies by Roentgen Ray. S. Tousey.—p. 544.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

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5 Open-Air Industrial Experiment for Tuberculous Cases; Hairmyres Colony, Lanarkshire. N. Bardswell.—p. 169.

British Medical Journal, London

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6 Anglo-Russian Hospitals. H. F. Waterhouse, W. D. Harmer and C. J. Marshall.—p. 441.
7 *Method of Early Closure of Recent Gunshot Wounds. W. H. Hey.—p. 445.
8 *Spread of Infection in Open Bone, and Its Bearing on Treatment of Projectile Fracture. E. K. Martin and G. F. Petrie.—p. 447.
9 *Method for Efficient Drainage of Knee Joint. A. W. Mayo-Robson.—p. 450.
10 Five Hundred Consecutive Cases of Acute Gonorrhea Treated with Vaccines. N. P. L. Lumb.—p. 450.
11 Case of Gonorrheal Keratosis. W. H. Brown and A. M. Davidson.—p. 453.

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12 Canadian Army Medical Service. J. T. Fotheringham.—p. 471.
13 Etiology of Trench Fever. A. M. Pappenheimer, H. N. Vermilye and J. H. Mueller.—p. 474.
14 Method to Facilitate the Isolation of Cholera Vibrio and Other Organisms. A. Castellani.—p. 476.
15 Adaptation of Thomas and Jones Splints to Obtain Fixation of Arm in Abducted Position While Patient is Ambulatory. R. B. Osgood.—p. 477.
16 Splint for Treatment of Gunshot Wounds Involving Shoulder Joint. J. Campbell.—p. 480.
17 *Pneumococcal Meningitis. C. Worster-Drought and A. M. Kennedy.—p. 481.
18 Inquest on a Leg. N. Porritt.—p. 483.

7. **Early Closure of Gunshot Wounds.**—Hey brings forward the use of a mechanical aid to excision of the wound, namely, the staining of the track of the missile with a 0.5 per cent. watery solution of brilliant green and, second, the use of a paste as the method of sterilization. The composition of this paste is the following: boric acid, 11 ounces; French chalk, 1 ounce; liquid petrolatum, 8 fluidounces; brilliant green (1:500), 17½ grains. The boric acid and French chalk are first intimately mixed in a mortar, then the liquid petrolatum is worked in, and finally the brilliant green dissolved in rectified spirit. Considerable time and energy are required to avoid a paste with many isolated masses of boric acid. It is kept in jars and used chiefly from large syringes with very wide nozzle apertures or from grease pumps. Departures from the quantities and constituents of this paste have been invariably productive of worse results. If the chalk is omitted it will not adhere to any but the driest and freshest of wounds, and intimate adhesion to the tissues is an essential quality of a paste. No toxic effects have been observed. A strong, firm scar rapidly results; the skin unites well over a cavity such as is left by a pulped tibia. Extensive wounds of the buttock, and wounds complicated by division of large arteries or by fracture of any of the long bones, have been quickly closed. Fractures have been successfully sutured in three to five days, and wounds dividing muscle have been closed by partial primary suture with safety, which must be the outstanding feature of any method. Hey pleads for complete excision of all wounds; without it good antiseptics and pastes are almost useless in quickly healing the broken skin.

8. **Spread of Infection in Open Bone.**—The following conclusions are drawn by Martin and Petrie with reference to the operative treatment of projectile fracture: Some are already well recognized, none are universally practiced. Soft parts killed by the direct effect of the missile require removal. An infected fracture of the shaft of a long bone requires opening to the full extent of solution of continuity. In infected fracture of cancellous bone the superficial débris of smashed trabeculae, etc., requires removal. Solid bruised bone is able to resist infection and may be left. As penetration is at its maximum in the first few days, early opera-

tion is essential, especially in fractures of cancellous bone involving joints. Every artery directly or indirectly supplying a fractured bone is of importance in the defence against infection. In the presence of vascular injury proximal to the fracture, radical measures, such as amputation or resection of a joint may be adopted with less hesitation.

9. **Method for Efficient Drainage of Knee Joint.**—By means of proper position of the leg Mayo-Robson makes the suprapatella pouch the dependent part of the joint, and by the very simple operation of inserting a tube into the top of the pouch the whole joint can be completely evacuated and purified, and if this is done sufficiently early, a speedy recovery may be anticipated with the joint mobility unimpaired. Two changes of position will make the suprapatellar pouch dependent: (*a*) the vertical position of the limb at right angles to the body with the patient in the dorsal decubitus, or (*b*) the prone position of the body with the foot of the bed well raised. In both positions the limb must be efficiently fixed on a splint, as fixation in inflammation of the knee joint is only second in importance to drainage. If for any reason the vertical position is inconvenient or difficult to carry out, the prone position can be adopted, the foot of the bed being raised and the limb slung from above by pulleys and weights for the thigh and leg. As the prone position is irksome if prolonged, the patient, when once the joint has been emptied, may, if necessary, be turned on his back and the prone position adopted for from half an hour to an hour every four hours at first, and later about three times in the day, until the drain can be dispensed with. When once the joint has been thoroughly evacuated of its septic contents, and if needful gently washed out with warm normal saline solution, the synovial membrane of the knee, like the peritoneum, is capable of taking care of itself. Long continued drainage is very seldom required, and usually a movable joint will be obtained.

17. **Pneumococcal Meningitis.**—Nine cases of pneumococcal meningitis have come under the care of Worster-Drought and Kennedy. In five cases the disease was the so-called primary form; that is, no lesion conceivably due to active pneumococcal infection was discovered elsewhere. Of the five cases, two were infants and two were adults. The adults had had catarrhal colds for three or four days, followed by severe headache, prior to the appearance of meningeal symptoms, while the younger infant had had sudden convulsions. Following the appearance of headache, vomiting occurred in four of the five patients, and delirium rapidly supervened in the two adults. Of the four cases in which meningitis occurred as a secondary infection to a focus elsewhere, in two the primary lesion was a lobar pneumonia, in one middle-ear disease, and, in the last, an empyema of the sphenoidal sinus.

Edinburgh Medical Journal

October, XIX, No. 4

19 Pyorrhea Alveolaris. J. H. Gibbs.—p. 219.
20 Treatment of Yaws by Salvarsan and Allied Remedies. R. de Boissiere.—p. 226.
21 Writer's Cramp and Allied Affections; Their Treatment by Massage and Kinesitherapy. D. Graham.—p. 231.
22 Preparation of Dry Specimens for War Office Collection. G. Richardson.—p. 239.

Journal of Tropical Medicine and Hygiene, London

October 1, XX, No. 19

23 Case of Localized Gangrenous Vaccinia. A. J. Chalmers and R. G. Archibald.—p. 217.
24 Keratodermia Punctata. A. J. Chalmers and A. Kamar.—p. 218.
25 Tropical Diseases Met with in Balcanic and Adriatic Zones. A. Castellani.—p. 219.

Lancet, London

October 13, II, No. 4911

26 *Investigation into Effects of Cold on Body. N. C. Lake.—p. 557.
27 Chemical Affinities of Vibrio Cholera. L. Nicholls.—p. 563.
28 *Normal Gundeafness. T. B. Jobson.—p. 566.
29 Case of Traumatic Rupture of Heart. G. R. Turner and L. P. Gould.—p. 567.
30 Gastric Digestion of Various Foodstuffs After Gastro-Enterostomy. A. A. Wolkoff and E. E. Klopfer.—p. 568.
31 Case of Compound Fracture of Patella Treated by Wiring; Complete Functional Recovery. J. B. Hance.—p. 569.
32 Surging Galvanic Current in Treatment of Paralysis. E. P. Cumberbatch.—p. 570.
33 Case of Ruptured Uterus with Unruptured Membranes. H. Shufflebotham.—p. 571.
34 Case of Adenocarcinoma of Appendix. J. A. C. Macewen.—p. 571.

26. **Effects of Cold on Body.**—Lake summarizes his paper as follows: (1) The temperature, 6 C., must be considered critical in relationship to the effects of cold on the tissues. (2) Degrees of cold below this temperature produce true frost bite and actual damage to tissues. (3) Degrees of cold above this temperature only produce effects secondarily by causing vasomotor paralysis. (4) Nerve blocking does not prevent either the effects of frost bite or of chilling. (5) The use of vasoconstrictors delays the swelling in cases of true frost bite, while in cases of chilling the exudation may be entirely prevented. (6) Satisfactory treatment of trench foot must be directed toward preventing any appreciable rise in capillary pressure. (7) In the production of trench foot cold must be considered the essential factor, other factors being either secondary or subsidiary. (8) Treatment by the use of vasoconstrictors, either intravenously or otherwise, would appear logical and worthy of trial. (9) Treatment by nerve blocking, either regional or central, is also suggested, although, in all probability, it cannot be expected to give good results unless used in conjunction with vasoconstrictors. (10) Prophylaxis consists in using any and every means of preventing congestion of the legs, and in avoiding, so far as possible, variations in the temperature. (11) The question as to whether any surgical procedure, such as temporary occlusion of the arteries, would bring about the desired reduction in capillary pressure is being investigated.

28. **Normal Gundeafness.**—Jobson endeavored to ascertain what proportion of soldiers exposed to gunfire go deaf, to measure, so far as possible, the amount of deafness produced in a previously healthy ear, to ascertain whether this deafness is temporary or permanent, and to investigate the type of deafness so produced. Sixty soldiers were examined. Many of the cases gave a history of severe or complete deafness for one or more days after exposure in a big "strafe," but almost invariably said they could now hear quite well. The cases were all infantry men, who would not be so close to big gunfire as the artillery. The conclusion of Lake's study was that exposure to gunfire in the present war often produces rapidly a permanent deafness. This normal—if the author may so call it—gundeafness is of a very definite type—a mixed obstructive and nerve deafness. The amount of deafness as shown by a C 2 fork is about ten seconds, aerial conduction, and four seconds of bone conduction.

Medical Journal of Australia, Sydney

September 15, II, No. 11

35 Ankylostomiasis in Papua. J. H. Waite.—p. 221.
36 Treatment of Syphilis in Australian Army. H. H. Griffith.—p. 223.
37 Case of Pericarditis Complicating Pneumonia in Infant. E. A. Tivey.—p. 227.
38 Epithelioma of Lip. W. A. Reid.—p. 227.
39 Strangulated Hernia in Child Three Weeks Old. J. H. Ingham.—p. 227.

Archives Médicales Belges, Paris

September, LXX, No. 9, pp. 793-896

40 *Treatment of Shock. W. H. Bayliss.—p. 793.
41 Vincent's Angina with Eruption: Two Cases. P. Nolf, A. Colard and P. Spehl.—p. 802.
42 Devices to Correct Paralysis of Hand and Leg. Privat and Belot.—p. 807.
43 *Nitrogen Minimum Ration. F. Malengreau.—p. 819.
44 The Value of Antitetanus Serum. J. Voncken.—p. 834.
45 The Medical Service in the Belgian Schools in London.—Schuermans.—p. 881.

40. **Treatment of Shock by Intravenous Injection of Gum Acacia.**—Bailiss is professor of physiology at the University College, London. He here discusses shock with subnormal blood pressure from loss of blood. The first indication, he says, is to restore the blood to approximately its normal volume, viscosity and osmotic pressure. Unless the injected fluid corresponds in these three points, it will fail to that extent in its purpose. In Bailiss' experiments on animals he found that intravenous injection of Ringer's fluid did not restore the blood pressure to normal. But with addition of 6 per cent. gum acacia to the fluid the blood pressure returned to normal. This evidently provided for a normal standard

of viscosity in the circulating blood. Army surgeons are finding solutions of gum acacia useful in the wounded when the drop in blood was due wholly or in part to the losses of blood. Bailiss noticed also in his experiments on animals that even the immediate benefit on the blood pressure from the solution of gum acacia surpassed that from ordinary saline solution, while the effect was permanent. The effect of Ringer's solution was quite transient. A 6 or 7 per cent. solution of gum acacia displays the same osmotic pressure as normal blood in parchment osmometers. The walls of the blood vessels, the same as parchment, are impermeable to colloids, and osmosis proceeds alike in both. When the osmotic pressure of the colloidal substances in the blood is diminished by dilution with a salt solution, filtration through the glomeruli occurs more rapidly than normal, so that the physiologic saline injected intravenously has a tendency to be eliminated in the urine, or it infiltrates into the tissues and may induce edema at various points. All who have made experiments on surviving organs perfused with Ringer's fluid have noticed sooner or later a tendency to edema. This does not occur if gum acacia has been added to the Ringer's fluid. Gum acacia at 7 per cent. or gelatin at 6 per cent. seems to conform to the requirements so far as the viscosity and the osmotic pressure are concerned, restoring practically normal conditions in these respects without danger for the animal. A 4 per cent. solution of gum acacia with 0.9 per cent. sodium chlorid gave excellent results in cats, and a 2 per cent. solution has been successfully used in the clinic. Gum acacia already contains calcium and potassium. This is the highest concentration used on man to date of which he knows.

Gum acacia can be easily sterilized by boiling and filtering through cloth; it is superior to gelatin on this account. It is not supposed to contain proteins, and hence anaphylaxis need not be feared. In shock of other origin, the blood may be abnormally concentrated from loss of water and salts. When this is the case, practically normal conditions can be restored by intravenous injection of Ringer's fluid. If the concentration is due to loss of the whole plasma, then the fluid to be injected should correspond in viscosity and colloid osmotic tension to the blood itself. Ringer's solution with 2 or 3 per cent. gum acacia seems to answer the purpose. There might be conditions in which it would be better to use a colloid with less viscosity but higher osmotic pressure, such as dextrin. The effect of hypertonic saline solutions is only temporary as the osmotic balance between the blood and the tissues is so promptly reestablished. Bailiss' experiments on cats with pulmonary edema, following inhalation of asphyxiating gas, confirmed that continuous administration of oxygen is the logical treatment. In the cats, withdrawal of even a small amount of blood reduced the blood pressure so low that death generally followed. Up to a liter of fluid has been found in the lungs in pulmonary edema in gassed soldiers. Intravenous injection of a 2 per cent. solution of gum acacia seems indicated, but as long as fluid is seeping into the lungs, it only adds to the flood unless we can restore the epithelium in the lungs to normal functioning, and oxygen seems the only reliance here. The suffering and dyspnea may persist, however, until the accumulated carbon dioxid has been thrown off by the amplified respiration.

43. **The Nitrogen Balance.**—Malengreau is professor of physiologic chemistry at the University of Louvain, and in the fourteen pages of this work he discusses the actual significance of the nitrogenous minimum.

Bulletin de l'Académie de Médecine, Paris

October 2, LXXVIII, No. 38, pp. 331-359

46 *Notification of Abortions and Miscarriages. P. Bar.—p. 333.
47 The Bread Question. (Le pain actuel.) Capitan.—p. 335.
48 *Syphilis and Heart Disease. E. Gaucher.—p. 349.
49 Extraction of Projectiles from the Heart. R. le Fort.—p. 354.
50 *Traumatic Glycosuria after War Wounds. F. Rathery.—p. 356.
51 Hibernation of Mosquitoes in Southeastern France. (Anopheles en Dauphiné.) L. Léger and G. Mouriquand.—p. 357.

46. **Notification of Miscarriages.**—The Académie adopted a resolution at its meeting October 2, in favor of applying to expulsion of every fetus, whatever the age of its intra-uterine life, the regulations already promulgated in the civil code in regard to notification of stillbirths.

48. **Syphilis and Heart Disease.**—Gaucher reiterates that the field of syphilis is being constantly enlarged, especially the affections of what he calls the quaternary stage of syphilis. The inefficiency of treatment in this stage is no argument against the syphilitic origin; we cannot cure tabes, although tabes is certainly of syphilitic origin. He calls attention in particular here to lesions of the myocardium and especially mitral lesions for which syphilis is responsible. He describes a typical case of mitral insufficiency accompanied by vague intermittent pains, exclusively muscular and intermittent, the knee jerks abolished. The man had been long treated for "rheumatism" and digitalis given for the mitral trouble, no one suspecting the unmistakable syphilitic origin of the trouble notwithstanding a history of syphilis years before and the present signs of abortive tabes.

50. **Glycosuria After War Wounds.**—Rathery found glycosuria in 4.17 per cent. of 1,412 wounded soldiers. The range was from 2 to 20 gm. with exceptional cases up to 35 gm. The duration was only for two or three days, except in two cases in which it was respectively two weeks and several months. But it finally disappeared in all. No instance of actual diabetes developing after a war wound has been encountered.

Bulletins de la Soc. Méd. des Hôpitaux de Paris

July 27, XLI, No. 26, pp. 929-985

52 Polycythemia; Two Cases. (Maladie de Vaquez.) Yacoel.—p. 929.
53 Itching Eruption in Men Tending Sick Horses. G. Thibierge.—p. 933.
54 Unimicrobian Typhoid Epidemics. P. Hébert and M. Bloch.—p. 939.
55 Mutability of Bacilli of Typhoid Group Cultivated from the Blood. P. Hébert and M. Bloch.—944. Action on Culture Mediums when Mixed. Id.—p. 946.
56 *Vaccine Therapy of Typhoid. Ranque and Senez.—p. 950.
57 *Differentiation of Diphtheria and Pseudodiphtheria Bacilli. E. G. Aviragnet and Le Soudier.—p. 952.
58 Radiography of Rectocolic Lesions with Dysentery. A. Florand and R. Bensaude.—p. 963.
59 *Spirochetosis. Manine and Cristau.—p. 977.
60 *Attempt at Suicide with Epinephrin. R. Grasset.—p. 981.

56. **Vaccine Therapy in Typhoid.**—Ranque and Senez report that in forty-six cases in which the vaccine treatment was commenced during the first week of the typhoid, the febrile phase lasted on an average only sixteen days. In a total of 120 cases they were impressed with the rarity of complication, absence of relapses, and the simplification of treatment as in a large number of the cases no other measures were required.

57. **Differentiation of Diphtheria Bacilli.**—When circumstances demand exact differentiation, cultures on coagulated serum of the true diphtheria bacilli are dry and white, while those of the Hofmann bacillus are moist and yellow. The diphtheria bacilli are slender, with numerous granulations, the rest of the protoplasm of an even and pale tint, not taking or retaining stains well.

59. **Meningeal Form of Spirochetosis.**—Manine and Cristau report 100 cases with spirochetes in the urine and in some in the spinal fluid also. In 51 cases the liver symptoms predominated, in 10 the pulmonary; in 4 the kidneys; 10 were of a rheumatismal and 10 of a typhoidal type and 11 of the meningeal type. There were 4 deaths in this latter group and one in the typhoidal, but there was no other mortality. In 6 of the 11 meningeal cases the spirochetes were alone and in 5 associated with other germs. There was purpura in 3 in the meningeal group, hematuria in one; extreme opisthotonos for two weeks in one and coma from hypertension in one. Recurrence was frequent; several times the lumbar puncture had to be repeated. Emaciation and anemia were pronounced, and spirochetes were often found in the urine during convalescence. Antimeningococcus serum was injected in three cases while the diagnosis was still dubious, and it unmistakably aggravated the clinical picture. In the other cases lumbar puncture, a fixation abscess and fluid by the rectum, saline with laudanum, and balneotherapy were the reliance.

60. **Attempt at Suicide with Epinephrin.**—The tuberculous young janitor of a pharmacy drank 15 gm. of a 1:1,000 solu-

tion of epinephrin (adrenalin) and five minutes later 20 gm., and then took some other solid drug marked poison, nature unknown. No special symptoms followed until by the end of the second hour the back of the neck became rigid and in two or three hours there were tetaniform contractions, extreme congestion of the face and intense headache. The pulse was about 120, full and regular; amyl nitrite and venesection brought great relief after withdrawal of over 500 gm. of blood. Emetics were also given, with caffein and camphor, and chloral to quiet the agitation. By the next day the only symptoms were a dull headache and pain in the epigastrium. The dry poison taken had evidently not been absorbed as the gastric mucosa must have been exsanguinated. The case teaches that the first swallows of the epinephrin expel the blood from the mucosa of the alimentary tract and hence no further absorption is possible and an emetic will obviate further danger. In this case the epinephrin did not begin to be absorbed for two hours. Grasset draws further the practical conclusion that in administering epinephrin by the mouth it should be given in minute doses, not over 0.25 or 0.5 mg. By this means 2 or 3 mg. swallowed in the course of the twenty-four hours will have a more effectual action than 10 mg. taken at one time. The phenomena from the congestion are also practically negligible with minute doses. In the discussion that followed, Netter remarked that he gives epinephrin by the mouth, from 3 to 5 drops in a teaspoonful of water. By this technic the epinephrin is absorbed before it reaches the stomach. When diluted with considerable water, it is liable to be modified by the gastric secretions. Josué prefers to give epinephrin subcutaneously in infectious diseases with failing suprarenal functioning. He adds 1 c.c. of the 1:1,000 solution to 250 or 500 c.c. of physiologic salt solution. Addition of 0.01 gm. novocain prevents the injection from being painful. The epinephrin is absorbed so slowly when given in this way, that it amounts practically to fractioned dosage, and it can be kept up for several days, as long as the condition requires it.

Correspondenz-Blatt für Schweizer Aerzte, Basel

September 29, XLVII, No. 39, pp. 1249-1328. Jadassohn Festschrift

61 *Eczema. B. Bloch.—p. 1250.
62 Case of Blastomycosis of the Skin. W. Dössekker.—p. 1257.
63 Unusual Localizations of Favus. Du Bois.—p. 1265.
64 Bromid Ulcer on Nose. A Guth.—p. 1268.
65 Nonmalignant Epitheliomas of the Sweat Glands. E. Hedinger. —p. 1270.
66 General Principles for Treatment of Gonorrhea in the Female. P. Jung.—p. 1276.
67 Tuberculids of the Face Resembling Rosacea. F. Lewandowsky. —p. 1280.
68 Necropsy Findings in Case of Chronic Glanders. W. Lutz.—p. 1282.
69 Protecting Pastes for Roentgen Work. G. Miescher.—p. 1286.
70 *Neosalvarsan Exanthem Cured with Epinephrin. O. Nägeli.—p. 1291.
71 Edema of Epidermis with Mammary Cancer. C. Wegelin.—p. 1298.
72 Case of Congenital Absence of Testicles. H. Wildbolz.—p. 1307.
73 Peculiarities of Wassermann Reaction with Nontreated Tertiary Syphilis. M. Winkler.—p. 1314.
74 Percutaneous Absorption. K. G. Zwick.—p. 1319.

61. **Eczema.**—Bloch remarks that we know today little more about eczema than twenty years ago. As hexamethylenamin generates formaldehyd in the tissues when taken internally, Bloch reasoned that this drug might induce bloodborne eczema in the predisposed. A young physician subject to eczema from formaldehyd externally, took 0.5 gm. hexamethylenamin three times a day and in three days parts of the skin were red and itching. By the end of the week symmetrical areas were covered with typical eczema, most pronounced on the upper arms and shoulders. This experimental eczema gradually subsided on suspension of the drug. This case supplies the hitherto lacking proof that eczema can develop from an internal cause. Our task now is to discover in the metabolism and the body juices the substances which are responsible for the development of eczema. The formaldehyd split off from the hexamethylenamin in the case reported must have been in extremely minute amounts.

70. **Neosalvarsan Eruption Warded Off with Epinephrin.**—Nägeli reports the case of a young man who developed patches of erythema on the face, with smarting in the left eye, fifteen minutes after an intravenous injection of 0.15 gm. neosalvarsan. The exanthem was of the type of the antipyrin exanthem. It subsided in twenty minutes but returned each time after the neosalvarsan during the following months until it was found that a preliminary intramuscular injection of 1 c.c. of a 1:1,000 solution of epinephrin warded off the exanthem. Unless the interval betwen the epinephrin and the neosalvarsan had been at least five minutes, the exanthem developed, and the area affected varied inversely with the dose of the epinephrin. Given by the mouth, no effect was apparent. The conjunctiva of the left eye, the cheeks and the brow responded most sensitively to the irritation from the neosalvarsan, as also the areas around pigmented nevi—all very vascular regions. Nägeli also witnessed excellent effects from epinephrin in arresting the disturbances in a severe case of meningeal irritation after neosalvarsan. Milian introduced epinephrin into treatment of the anaphylactoid attacks after salvarsan, resembling the vasodilator disturbances sometimes noted under amyl nitrite. Nägeli further warded off in this way the violent diarrhea to which three patients were subject when taking mercury. After an intramuscular injection of 1 c.c. of the epinephrin solution, the mercury could be given without the otherwise inevitable diarrhea. In other cases the epinephrin proved equally effectual in warding off symptoms of medicinal intolerance. In only one instance did it fail; this patient at the single trial said that his mercury vertigo was worse after the epinephrin. The neosalvarsan exanthem may be due to a pure idiosyncrasy of the skin alone, or the internal organs may share in it, or the latter alone may be affected first and the skin only secondarily from the toxic products generated in them, especially in the liver. As a typical example of the latter, he cites Neisser's arsenophenylglycerin case with a fatal outcome. The first dose had induced only what seemed to be a pure drug exanthem.

Annali d'Igiene, Rome

September, XXVII, No. 9, pp. 549-607

75 The Streptothrix in Disease of the Lung. F. Sanfelice.—p. 549.
76 Pigment-Producing Bacteria. (Biologia dei cromogeni.) M. Pergola.—p. 552.
77 The Haemotrichomonas Gallinarum n. sp. F. Martoglio.—p. 561.

Gazzetta degli Ospedali e delle Cliniche, Milan

September 27, XXXVIII, No. 77, pp. 1041-1048

78 Physiologic Treatment of Infected Wounds. E. Bertarelli.—p. 1041.

September 30, No. 78, pp. 1049-1064

79 *The Organ of Hearing during the War. F. Brunetti.—p. 1049.
80 The Great Question of Proprietary Medicinal Articles. (Specialita medicinali.) E. Villa.—p. 1063.

79. **The Ear During the War.**—Brunetti reviews the various causes liable to injure the organ of hearing during the present warfare. He discusses in particular the injuries from explosions without direct contact, and the detection of simulated or exaggerated deafness in one or both ears. This is particularly difficult when there is or has been hysteric deafness. With this, other stigmata of hysteria must be sought; the reactions to electric tests may be modified. An electric shock alone may cure hysteric deafness. General anesthesia has proved useful in some cases and hypnotism in others, or both together. The areas of hypesthesia in the skin are instructive, as also changes in the visual field and inversion of colors.

Pediatria, Naples

October, XXV, No. 10, pp. 577-640

81 *Color Reaction in Pathologic Cerebrospinal Fluid. L. Chiaravalloti. —p. 577; R. Vaglio.—p. 581.
82 *Organic Nature of and Calcium Metabolism in Chorea. U. Provinciali.—p. 586.
83 Vaccine Therapy for Children. P. Ceppellini.—p. 602. Continuation.

81. **Color Reaction in Cerebrospinal Fluid.**—Chiaravalloti has applied Boveri's color test in thirty cases of various meningeal troubles and normal controls, and expatiates on the simplicity of the technic and the reliability of the bedside findings. [The test was described in THE JOURNAL, June 11,

1914, p. 205.] To 1 c.c. of the cerebrospinal fluid is added 1 c.c. of a 1:1,000 solution of potassium permanganate. If the cerebrospinal fluid is normal, the violet tint persists unmodified for some time. With a pathologic fluid, the tint turns yellowish, and the sooner and more intense the phenomenon, the more pathologic the cerebrospinal fluid. He tabulates the findings with parallel tests in his thirty cases, all confirming the other clinical data.

Vaglio confirms these favorable statements and emphasizes in particular the importance of this simple test when there are dubious symptoms and the cerebrospinal fluid is limpid. In thirteen such cases the albumin content of the fluid was only slightly above normal, but this test revealed its pathologic character, confirmed by the course of the cases. He notes further that the reaction does not seem to be modified by the accidental presence of red corpuscles in the fluid. His technic differs slightly from Boveri's as he uses only 1 drop (0.05 gm.) of a decinormal solution of potassium permanganate for 1 c.c. of the fluid, shaking up the test tube.

82. **The Organic Basis of Chorea.**—Provinciali reviews the literature on this topic and describes his personal research undertaken to determine whether symptoms of chorea indicate participation of the pyramidal tracts and cerebellum in the meningo-encephalitis which seems to be responsible for chorea. The manifestations of the disease are so multiple and variable that it is difficult to pass judgment on their source and nature. But with extensive compilations of cases it has become evident that the aggregation of certain symptoms, each insignificant in itself, points more and more conclusively to an organic basis. Cerebellar elements in the clinical picture are hinted in over half the cases. Three cases are described in detail with the findings as to metabolism of calcium compared with a normal child, all on a constant diet. In the child of 7 there was little deviation from the normal type, but in the girl of 14, instead of retention of over 30 gm., only 0.918 gm. was retained and nearly 4 gm. eliminated in urine and feces.

Policlinico, Rome

September 16, XXIV, No. 38, pp. 1149-1176

84 *Treatment of Pyothorax. E. Morelli.—p. 1149.

September 23, No. 39, pp. 1177-1204

85 *Practical Value of Exact Coaptation of Nerve Fibers in Anastomosis of Nerves in the Limbs. C. Barile.—p. 1177.
86 Case of Alleged Occupational Cerebral Hemorrhage. A. Ranelletti.—p. 1182.
87 Median Longitudinal Incision of the Patella. P. Nigrisoli.—p. 1185. M. Fasano.—p. 1186.
88 Dentistry for the Combatants. A. Piperno.—p. 1187.
89 The Otorhinolaryngologic Service in the Army. G. Turtur.—p. 1189.
90 Trachoma in the Army. L. Alajmo.—p. 1191.

84. **Treatment of War Wounds of the Chest.**—Morelli urges the promptest and most complete clearing out of all the blood in the chest, and has devised an apparatus with which the blood is replaced at once by air, thus maintaining the immobilizing compression desired while getting rid of blood, pus, and all secretions. The apparatus for the purpose is a modification of the one devised for thoracocentesis. The illustration shows the two jars with two tubes in the stoppers, connecting tubes, a rubber bulb at one end and a syringe at the other, the aspirating needle connected with the tubing between the jars. The apparatus allows the chest cavity to be rinsed out with a disinfectant if desired. At the beginning of the war, abstention was the rule for chest wounds, but this principle has given way to systematic intervention just as with abdominal wounds. The results are better the earlier it is applied, but mastery of the technic is indispensable.

85. **Coaptation of the Special Fibers in Suturing Peripheral Nerves.**—Barile discusses the practical importance of Stoffel's method of ascertaining the topography of the nerve fibers and suturing like to like. It has been Barile's experience in a number of cases and in experimental research that only the motor fibers of the paralyzed nerve regenerate in the mixed nerves in the limbs after direct electric tests have been applied. On the other hand, time and experience have abundantly confirmed the superiority of his own technic which ensures a large area of coaptated surface, while the nerve fibers, both sensory and motor are left intact. [His method was described in THE JOURNAL, Jan. 11, 1913, p. 170.] He protects the nerve with a piece of the membrane from a hen's egg, boiling first in a gauze bag and then tying it around the nerve, fastening the end of the piece to the connective tissue. This membrane shield lasts long enough before it is absorbed for healing to proceed beyond the stage of adhesions to the nerve. For the anastomosis of the paralyzed nerve, to be grafted on the sound nerve, he cuts the peripheral stump end of the paralyzed nerve in swallow-tail shape, and fits it up into the sound stump prepared to receive it. Each of the swallow-tail tips is fastened in place in the sound nerve with a single stitch. The raw surface between the stumps covers a much larger area than with other technics, and the results, he says, have been most gratifying. The egg membrane is proving a reliable means to protect a nerve after it has been released from a constricting bed of cicatricial tissue.

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August, XXVII, No. 153, pp. 5-224

91 Circinate Degeneration of the Retina. R. Argañaraz.—p. 5.
92 Syphilitic Pancreatitis. C. B. Udaondo.—p. 19.
93 Sarcoma of Brain of Man of Thirty-Six. M. R. Castex and R. Pradere.—p. 30.
94 *Ileosigmoidostomy for Chronic Constipation. A. Ceballos.—p. 48.
95 History of Hygiene in Argentina. E. R. Coni.—p. 66. Continuation.
96 Putrefaction and Antiputrefaction Bacteria in Milk. E. Fynn.—p. 115.
97 *Pancreatic Diabetes. P. J. Hardoy.—p. 123.
98 Successful Removal of Rhinophyma. J. M. Jorge and A. Speroni.—p. 131.
99 *History of Bubonic Plague. A. M. del Pont.—p. 165. Conclusion.
100 *Pulmonary Tuberculosis in Children. J. C. Navarro.—p. 197.

94. **Shortcircuiting the Lower Intestines in Treatment of Chronic Constipation.**—In the case reported by Ceballos the benefit from ileosigmoidostomy in the young woman was so pronounced that it certainly encourages further trials of this shortcircuiting method in treatment of habitual obstipation. The various other technics for remedying this condition are described with this, and its advantages extolled in cases of constipation for which no cause can be discovered and vagotony or sympathecotony seems to be responsible.

97. **Pancreatic Diabetes.**—Hardoy reports a case in a young man of 21 in whom the pancreatic diabetes had rapidly developed. Certain features of the case suggested an inherited syphilitic taint as responsible for the trouble. The diabetes was of the lean type, of rapid development, with high azoturia and glucosuria, and great prostration. Hardoy recalled that hypertony of the sympathetic system has been incriminated by some in the genesis of glucosuria, but tests in this case failed to reveal any sympathetic hypertony. Certain circumstances suggested that although there was no sympathetic hypertony, practically the same effect was realized by hypotony of the antagonist vagus system. Tests for vagotony gave positive findings, and he tentatively administered pilocarpin to raise the vagotony level to normal. The effect was marked, amply confirming his premises. As the nervous system became habituated to the pilocarpin, the effect grew constantly less. At this point he began vigorous mercurial treatment, and the sugar disappeared promptly from the urine. To confirm these conclusions anew, he brought on the glucosuria again by a change of diet, and banished it promptly anew with pilocarpin. In conclusion he reiterates that syphilis should always be sought in diabetics. He adds that severe diabetes of the pancreatic type, in the young, is liable to improve remarkably under treatment, which might include pilocarpin.

99. **Bubonic Plague.**—This instalment brings to a close Del Pont's long historical sketch of bubonic plague through the ages. In Argentina it seems there were 1,635 cases from 1899 to 1913, inclusive. It appeared also in Brazil for the first time in 1899. Rosario in Argentina is still an important focus, 40 cases in and around it being known in 1914. It had the first case of plague in the country, imported from Paraguay whence it spread to Buenos Aires. But the Salta focus became infected, by way of Chili, from the endemic focus at San Francisco. "This," he adds, "is the city that with its commerce scattered the plague along the entire Pacific Coast of America." The data show, he says, that in Argentina the

disease has not been spread by migration of rats but exclusively by the railroads. The disease always appeared first in the grain warehouses, in warehouses where there are goods in sacks and, predominantly, in the vicinity of railroad stations.

Del Pont's study of the plague through 4,000 years shows that it occurs in waves. It spreads rapidly around the world, following the routes of commerce, and then seems to die out simultaneously everywhere, without known cause. The decline cannot be from attenuation of the death-rate as the mortality in the latter part of the epidemic is as high as at first. It cannot be explained either by acquired immunity, as this would require having passed through a mild attack. When the epidemics declined, scattered endemic foci were always left, as at present in Buenos Aires and Rosario, Rio, Para, Pernambuco and Bahia in eastern South America. But such foci usually die out before long all except a very few. These places shelter the virus until it starts another pandemic. In previous ages bubonic plague killed human beings and domestic and wild animals alike, but of recent years it seems to be pathogenic only for man and certain rodents; at least the latter are the only ones that have the disease naturally. But the virulence of the disease has not been modified. Men die of it now just as promptly as in the days of Thucydides or Procopius.

The present epoch is now characterized by a disquieting persistence of the disease in the scattered endemic foci around the world. Many places that had never had a case ten years ago, have now become actual endemic foci on a small scale. The present epidemic seems to be favored by unhygienic conditions, as in the epidemics of previous ages. The prophylactic measures at present in vogue are effectual only in certain circumstances, and they succeed in extinguishing the disease only in certain localities. In the semibarbarous districts they do no good whatever. On the other hand, the most civilized communities escape with relative facility without much in the line of special measures. As Aubert said in 1840, "the plague must be combated not with lazarets but with civilization." The classic foci hitherto have been parts of southern and northeastern Asia, Mesopotamia, Arabia, the Caucasus mountains, and Kissiba in Africa between the lakes Albert and Victoria, but Del Pont's summary shows now many other equally dangerous foci.

100. **Special Forms of Pulmonary Tuberculosis in Children.**—Navarro describes six cases of chronic pulmonary tuberculosis in children in whom extensive lesions in the lungs did not appreciably debilitate, all presenting the aspect of health. One of the children did not even have a cough. The only constant symptoms were the lack of appetite and the tendency to lassitude. They were usually pale, but one had quite a ruddy complexion. All except one were annoyed by frequent coughing without dyspnea, cyanosis or subjective symptoms. Two of the children were 4 and 5, the others, between 8 and 14. In two, the right or left apex was the seat of the lesion; in the others, the base of the lung.

Semana Medica, Buenos Aires

August 16, XXIV, No. 33, pp. 177-202

101 Vaccine Therapy of Diphtheria. (Tratamiento de la difteria por la haptinogenina.) J. Mendez and L. A. Garcia.—p. 177; (El haptinogeno Neumo complemento del tratamiento antidifterico.) M. Ochoa.—p. 204.

102 Radium Treatment of Cancer. E. Jonquieres.—p. 202.

Siglo Medico, Madrid

September 15, LXIV, No. 3327, pp. 685-704

103 Pathogenesis of Suicide in Dementia Praecox. G. R. Lafora.—p. 686.

104 Albumin Reaction in the Sputum in Diagnosis of Pulmonary Tuberculosis. A. J. T. Lopez.—p. 689.

105 Hydrogen Dioxid—Lanolin Salve. Sicilia.—p. 692.

106 The Aims of Medical Inspection of Schools. M. de T. Latour.—p. 692.

107 The Blood Findings in Employes of Gas Works. J. de la Rivaherrera.—p. 693.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

August 18, II, No. 7, pp. 533-612

108 *Do Animals Feel Pain? (Voor en tegen proeven op levende dieren. II.) G. van Rijnberk.—p. 533.

109 Generalized Mycosis Caused by Monilia Alcalophilis. E. E. A. M. de Negri and J. B. Waller.—p. 537.

110 Burow's Solution of Aluminum Acetate in Treatment of Wounds. N. Schoorl.—p. 548.

111 Etiology of Scleroderma. J. Koopman.—p. 553.

112 Psychanalysis. W. L. L. Carol.—p. 561.

113 Orbital Abscess with Disease of Lacrimal Sac. G. ten Doesschate.—p. 564.

108. **Is There Sensation of Pain in Animals?**—Van Rijnberk is professor of physiology at the University of Amsterdam. He here remarks that theoretically it is impossible, and practically it is often difficult, to determine whether a human being is suffering pain, and to determine whether an animal can suffer or does suffer pain is even more difficult. Have animals (all animals? one given animal?) mind, reason, consciousness? Have they (all? a given one?) perceptions comparable to those of man? One person regards all animals as merely automatons; another believes that a horse can do examples in arithmetic.

But so far as determination of whether an animal is suffering "pain" or not is concerned, we are exclusively restricted in our judgment to vague signs, such as sounds, movements, and the like as testifying to the presence of pain. We have to bear in mind here that nothing, literally nothing can guarantee to us that in a given case any manifestation which we are accustomed to consider as an expression of pain—nothing can guarantee to us that in reality this manifestation is accompanied by conscious perception.

The extent to which one can be misled by assuming that the apparent manifestations of pain are reliable signs of such, is rendered plain by Norman's angleworm experiments which any one can repeat with an angleworm, a pair of scissors and a little loose dirt. Who is there that has not seen an angleworm curling up and twisting when part has been stepped on or been chopped by a spade? Norman subjected these "pain contortions" to closer analysis, and found that when an angleworm is cut in two with scissors, the tail end writhes and twists as if in agony, but the head end, the supposed seat of the perception of pain, creeps quietly onward. By cutting each half again in two, the part toward the tail begins to twist and writhe while the part toward the head lies quite still or creeps quietly on. Even the front end of the previously twisting tail part, becomes quiet when it is severed anew, while the rear portion continues twisting. Whatever the explanation of these facts can be, it is most certainly evident that the writhing of an angleworm cannot be regarded as an expression of "pain," because that very end of the body where the higher centers are supposed to be located does not share in the manifestations. Similar but not quite identical phenomena are observed with eels and lizards. If the tail of a lizard is suddenly chopped off, the tail begins to jump about, but the body of the lizard soon lies quiet. Here too we see the apparent expressions of pain in the part of the body where we would least expect it. Such facts show how cautious one must be in the interpretation of the supposed objective expressions of subjective sensations in animals.

Even assuming for the sake of argument that all animals possess varying degrees of conscious perception, this does not answer the question as to whether they feel pain. There are numerous grounds for assuming that, at least in man, pain is a function of his highest psychic powers. It seems to be a general rule that the more intense the response in the form of pain to a given injury, the more highly developed the nervous system responsible for the sensation. The civilized man feels pain where the savage would not notice the irritation. In imbeciles and idiots the sensation of pain seems to be rather vague. Applying these data to the whole animal kingdom, the sensation of pain can be regarded as a psychic supplement to the unconscious reflexes, which has been regularly developed in the animal series in response to injurious influences. Each irritation starts in the nervous system a series of more or less effectual reflexes, movements for flight or defense, or secretion of fluids, as of saliva in the mouth, tears to protect the eyeball, etc. For the behavior of an organ or the whole animal in these circumstances it is immaterial whether these useful reactions are associated or not with a conscious sensation of pain.

Supposing that an animal sticks his paw in a flame. The reflex mechanism from his spinal cord draws the paw back out of the flame, and it is immaterial for the paw whether the animal felt pain thereby or not. But for the further existence of the animal it is of the greatest importance whether he can profit by this experience or not. The next time, warned by the sight of the flame, he may keep cautiously out of the reach of the bite of the flame monster. But learning this lesson presupposes the presence of a number of psychic properties and power of reasoning, recognition, memory, association and deduction. In the absence of all these mental processes the sensation of pain would be of no possible use and quite superfluous. There is thus great probability that the (subjective) perception of pain is a later acquirement than the manifest (objective) reaction to injurious stimuli. It forms a sort of psychic by-product, a by-phenomenon of the automatic reflex. And, as a psychic phenomenon, it is closely connected with the development of the mind.

Hospitalstidende, Copenhagen

August 22, LX, No. 34, pp. 813-836

114 *Residual Nitrogen in the Blood with Surgical Kidney Disease. A. Sabroe.—p. 813.

114. **Residual Nitrogen in the Blood with Surgical Kidney Disease.**—Sabroe remarks that none of the functional tests for the kidneys, with stains, experimental polyuria or determination of the freezing point, have proved unfailingly reliable. They all overlook the vital point that the functioning of the kidneys at a given moment is not necessarily the criterion for their average functional performance. The most reliable information as to the functional capacity of the kidneys seems to be afforded by the urea content of the urine taken from each ureter separately. Positive findings are strong evidence in favor of operability, but the reverse is by no means the case. With surgical tuberculosis, there is always a possibility that the part of the kidney which it is proposed to remove may in reality be the very tissue responsible for the approximately normal functioning. Determination of the residual nitrogen in the blood as a test for the functional capacity of the kidneys, Sabroe declares, is of no clinical value in estimation of surgical kidney affections, as the rise in the residual nitrogen content does not occur until so late in the disease that the clinical findings alone tell the story by that time. This conclusion is based on study of eight patients with tuberculous lesions in the urinary passages, ten with nontuberculous lesions given operative treatment, and eight mixed cases. These twenty-six cases are tabulated with full details, filling thirteen pages, all confirming the disappointing verdict.

Norsk Magazin for Lægevidenskaben, Christiania

April, LXXVIII, No. 4, pp. 393-504

115 *Chorea. II. C. Schiøtz.—p. 393.
116 Nutritional Disturbances in Infants. C. Johannessen.—p. 427.
117 The Normal Peristalsis of the Colon. J. Nicolaysen.—p. 447.
118 Pure Word Blindness. J. Henrichs.—p. 452.
119 *Carbon Monoxid Poisoning in Motor Boats. F. Harbitz.—p. 462.

115. **Chorea.**—Schiøtz concludes from his experience with 211 cases of chorea that it is a neurosis which develops in the predisposed mainly between the eighth and twelfth years in boys, and two or three times as often in girls; usually between the sixth and fourteenth years in girls. There were representatives of all ages under 23 in the total 376 cases tabulated, which includes 165 Danish cases. The inciting causes may be of infectious or toxic nature or emotional stress, but the predisposed age is the period of most active growth. The years closest to puberty are less affected. True chorea has never been observed in animals. The tabulation shows further that the largest number of cases develop in November and the smallest in July. Analysis of 28,754 cases of acute articular rheumatism in Norway, 1907-1913, shows that it affects the sexes about alike. Over 20 per cent. of the cases were in children under 15, consequently we have no ground for calling chorea "childhood's acute articular rheumatism" as some do. Chorea is most prevalent in towns, and among bright, ambitious schoolchildren just at the years when the greatest proportionate demands are being made on the brain and nervous system, and the metabolic processes are particularly lively.

Treatment is like that for neuroses in general, tranquilizing measures with nourishing food and hygiene. The unmistakable benefit from arsenic may be on account of its checking the metabolic processes in general, so that it acts as a sedative. In the pregnant, besides the intensified metabolic processes, there may be an eventual intoxication, conditions thus comparable to the period of most active growth in children. A compilation of 217 cases of pregnancy chorea shows that in 140 of the women it developed in the first half of the pregnancy. In a further compilation of 224 cases of pregnancy chorea, 106, nearly half of the women, were under 21 and 102 between 21 and 26, leaving only sixteen older than this in the total 224 cases. Youth in the pregnant women is thus a predisposing factor to pregnancy chorea. Possibly roentgenoscopy might show in cases of pregnancy chorea that some of the epiphyses have not yet become united to the shafts of the bones, showing that the period of active growth still persists. Infections, autointoxications and emotional stress may be the source of the reflected irritation in the pregnant as well as in children.

119. **Carbon Monoxid Poisoning in Motor Boats.**—Harbitz describes several cases of poisoning from leakage of exhaust gas into the small cabin of a motor boat. In one case a party of four young persons went out on a pleasure trip. Two went into the small cabin and shut the door. In half an hour the others entering found the young man dead and the girl unconscious. The air was close in the room but there was no special odor, no smell of gasoline. The young man was a healthy athlete. He was found stretched out with closed eyes; there was no foam at the mouth and he had not vomited, but had voided excreta. Nothing was found to indicate suicide, and the blood confirmed the assumption of carbon monoxid poisoning. The motor was defective and leaky; the exhaust gas contained unusual amounts of carbon monoxid and the arrangements were such that the exhaust gas might have accumulated in the cabin. Women seem to be more resistant to carbon monoxid than men, and the young woman in this case finally recovered. In a series of 360 cases of coal gas poisoning at Paris, man and wife were affected together in nineteen, and the three survivors were all women. Women in an unconscious condition can hold out longer, as their need for oxygen is less.

Four workmen later had a similar accident. All were fasting, and sought shelter from the cold in the small cabin of the motor boat, 2 by 2 by 1.5 meters in size. All were found unconscious, ice-cold, but not cyanotic; respiration was weak and shallow. Their arms were stiff and pressed tight against the body and the jaws closed tight. Some had vomited and defecated, and the urine flowed spontaneously. Under artificial respiration and massage, heat and stimulants, they were revived in the course of a few hours. Two did not regain consciousness until the next morning. All had headache and nausea and were unable to go to work for a few days, but finally all recuperated. In these motor boats a seat was built in entirely around the edge of the boat and formed a closed space. Leakage of exhaust gas into this space thus permitted it to gain entrance into the cabin. Harbitz calls attention in particular to the stiffness of the body in a seated position in all the four men. It seemed to be an actual rigor mortis in the living body. In the fatal cases of carbon monoxid poisoning, the rigor is generally exceptionally intense. Hultkvist recently noticed signs of carbon monoxid poisoning in himself while waiting in his garage for his automobile engine to heat up. A rat exposed close to the exhaust gas died. He warns further that the dangerous gases from a garage may rise. Harbitz describes further the case of Dr. Kildal, 45 years old, who spent the night on his motor boat. It was a covered boat, with a gasoline engine and a portable heater. The latter was lighted for one hour and later for half an hour. In the morning the engineer felt headache and nausea and found the doctor, stiff and cold beside him, the blood showing carbon monoxid poisoning. Harbitz regards the carbon monoxid in the exhaust gas as responsible for these accidents.